THE LANCET.

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Erasmus Wilson Lecture

ON

ACUTE AND CHRONIC INFECTIONS OF THE URINARY TRACT DUE TO THE BACILLUS COLI.

Delivered before the Royal College of Surgeons of England on Feb. 14th, 1908,

By LEONARD S. DUDGEON, M.R.C.P. LOND.,

BACTERIOLOGIST TO ST. THOMAS'S HOSPITAL, LONDON; JOINT LECTURER ON GENERAL PATHOLOGY AND LECTURER ON SPECIAL PATHOLOGY IN ST. THOMAS'S HOSPITAL MEDICAL SCHOOL.

MR. PRESIDENT AND GENTLEMEN,—My first duty is to thank you for the honour which you have done me in permitting me to bring to your notice some investigations which I have made during the last few years on acute and chronic infections of the urinary tract due to the bacillus coli.

I have avoided in this lecture as far as possible employing such terms as "cystitis," "pyelitis," and "acute nephritis" (either simple or suppurative) for various reasons, more especially because the differential diagnosis of inflammation of the bladder, pelvis of the kidney, and of the kidney itself is given in detail in some of the standard works on medicine and surgery. It would, therefore, be quite out of place for me to discuss this part of the subject, even if I were competent to do so. On the other hand, it is extremely doubtful if the precise limit of infection can be definitely determined in all cases.

CLINICAL FEATURES.

Acute infection.—In most of the acute cases the onset is sudden. A rigor may be the first indication that the patient is ill. The pyrexia usually oscillates between 101° and 103° F., sometimes it may reach 104°–105°. There is usually frequency of micturition, which is accompanied by pains of more or less severity. In some instances, although the desire to micturate is considerable, only a small quantity will be passed at the time, and this will be accompanied by burning pains along the whole length of the urinary tract. Nausea and vomiting are often present. Tenderness of both kidneys may be detected, although the pain and tenderness are generally much more marked on one side. It is usually stated that the kidney which is most tender is definitely enlarged. In some cases the spleen can be felt below the costal margin and this, together with pyrexia, has led to the diagnosis of typhoid fever. The urine is acid and turbid from the presence of bacilli. Large numbers of leucocytes may be found and pus is usually present. In some cases blood is also detected.

Chronic infection.—It is impossible to give an account of the clinical features in these chronic cases because the symptoms may vary from a few apparently unimportant facts to a condition of considerable severity, while in many instances there is nothing to suggest from the patient's symptoms that there is anything abnormal in the urine. In women the bacillus coli may multiply in the urine causing bacilluria, and sometimes pyuria, without producing any symptoms pointing to an infection of the urinary tract. Every now and again cases of this type occur, but develop in addition pyrexia which has led to the diagnosis of influenza, tuberculosis, malaria, and chronic undulating fever. There had been no symptom whatever pointing to infection of the urine, so that this side of the question had been disregarded. In some cases women have been known to have had many of these acute attacks of fever without any definite cause to explain the condition. These facts are important because they serve partly to explain the reason why patients develop an acute or subacute infection of the urinary tract without any apparent cause. In men, however, similar cases are much less frequent. It is in them more common to obtain a definite history pointing towards an abnormal state of the urine. Perhaps the most frequent complaint is the presence in the urine of so-called "lumps" or "threads." The so-called gouty urethritis may be due to an infection of the urine and urethral mucous membrane by the bacillus coli. I have seen a few chronic cases suffering from a definite urethral discharge which had been regarded as gonorrhœal in origin, contrary to the views of the patients. The discharge consisted of pus cells and bacilli. In each case which I have examined, however, a pure culture of bacillus coli has been obtained from the urethral discharge and also from the urine, while there has been no evidence of the gonococcus. I have never met with a case of acute urethritis in men caused by the bacillus coli, although Playm and Laag[1] have published a case of urethritis which simulated gonorrhœa but which they considered to be due to the bacillus coli.

In one of the chronic cases a definite urethral discharge was set up for about 48 hours owing to a large sound having been passed. Mr. E. M. Corner has drawn attention to the satisfactory information which may be obtained if a urethral sound is passed on a man whose urethra is apparently healthy but who has had gonorrhœa some time previously. I have examined several patients in whom the discharge had occurred about 24 hours after the instrument had been passed and proved the presence of gonococci. In every instance there had been no previous history of gonorrhœa for some considerable period. In some of the cases the patients denied having had any urethral discharge for more than a year. The objection to the method is that an inflammatory focus is set up in what was apparently a healthy urethra. It is very doubtful, however, if this can be regarded as a disadvantage, because patients of this class, who are in apparently perfect health, are carriers of the gonococcus, just as we know that healthy people may convey the typhoid bacillus, and thus prove a means of spreading the infection.

In children incontinence of urine is sometimes associated with the presence of bacilli in the urine. Various nervous phenomena are also said to occur. Dr. C. R. Box has written on this subject in detail in a paper recently published in THE LANCET.[2]

In concluding these remarks on the presence of the bacillus coli in the urine under such varying conditions, it is most striking that the organism may be present without any clinical manifestations pointing to an abnormal condition of the urine.

THE URINE.

Reaction.—In by far the larger number of cases the reaction of the urine is acid; sometimes it is neutral; very occasionally the urine from which the colon bacillus has been cultivated has been found to be alkaline.

General appearance.—It would seem to be most satisfactory if a description of the general appearance of the urine infected with the bacillus coli were given in a tabulated form.

A. Urine quite clear, but on cultivation the colon bacillus detected.
B. Turbidity of varying degrees, Bacilluria.
C. Similar to B, but with varying degrees of inflammation as shown by a deposit of leucocytes.
D. Pyuria and bacilluria.
E. Pyuria and on cultivation the bacillus coli is present.

Hæmaturia may complicate any of these conditions, with the exception of A. The presence of the bacilli in the urine in sufficiently large numbers to give rise to turbidity causes quite a characteristic appearance, to which the term "shimmering" has been applied.

Chemistry of the urine.—A nucleo-proteid substance can be detected in the urine in most instances. In the large majority of cases of bacilluria albumin is present, although it may only amount to a very slight trace. In the inflammatory and suppurative conditions, or in those instances in which hæmaturia has occurred, albumin is present in larger amounts, and sometimes in cases of suppuration the amount of globulin may exceed the albumin. A reducing substance is often found in cases which have been treated by means of urotropin.

Microscopical examination.—I have never seen casts in the urine in uncomplicated cases of this disease. Epithelial cells derived from some portion of the urinary tract are often present in centrifugalised specimens of the urine. In every case of bacilluria a centrifugalised specimen of the urine will show one or two polymorphonuclear leucocytes in a film preparation. In most instances, the bacilli which are present in the urine are extra-cellular. The bacilli in the urine always show obvious beading, especially in film preparations stained by Leishman or carbol thionin. Crystalline deposits are met with such as may occur in the urine in healthy individuals. The only reason for referring to this here is, that when crystals are present the bacilli are usually grouped around them in centrifugalised samples of the urine, and under such conditions may retain the red stain during examination for

[1] Centralblatt für Bakteriologie und Parasitologie, 1895.
[2] THE LANCET, Jan. 11th, 1908, p. 77.

tubercle bacilli and therefore be regarded as acid-fast. I have had the opportunity on more than one occasion of examining slide preparations showing this technical error. In every case in which the urine is examined in women catheter specimens must be employed.

BACTERIOLOGY OF THE URINE.

I have no intention in this lecture of referring to the cultural properties of the colon bacilli which I have isolated from the urine. It is necessary to state, however, that in every instance the organism referred to as the bacillus coli has been subjected to a complete cultural investigation. From the published records of some cases it appears that the mere presence of a bacillus, in the urine has been sufficient to justify the opinion that the organism was the bacillus coli. All specimens of urine obtained with strict bacteriological precaution should be examined both culturally and microscopically.

If the bacilli isolated from urine are subjected to a complete bacteriological investigation it will be found that in a certain proportion of cases the organisms belong to the proteus group, while in other instances they may resemble closely the true colon bacillus but yet fail to give certain important cultural tests which must cause them to be regarded as atypical. Similarly certain diplococci and streptococci which occur in the urine are sometimes called, but incorrectly, the pneumococcus and the streptococcus pyogenes. Quite apart from the fact that these organisms to which I refer are practically devoid of pathogenic properties the valuable work of Andrewes and Horder is sufficient to show how easily the error can be avoided.

Normal urine.—The urine was obtained from several healthy medical men and others but in no instance was the bacillus coli cultivated.

Cases of chronic constipation.—It is known that the bacillus coli may acquire abnormal properties in the intestines, and it is stated that when this bacillus is isolated from the intestinal contents in certain chronic and acute diseases it is more virulent than otherwise. For this reason and also because of the improvement which has been stated to occur by treating cases of chronic infection of the urinary tract due to the bacillus coli with calomel, it seemed advisable to examine the urine from well-established cases of chronic constipation. The bacillus coli has been obtained in two cases out of a total of 20, but an atypical culture of the bacillus was present on one occasion. These results cannot be regarded as at all striking. The only point of interest is this, that in those cases in which the organism was present it produced no symptoms and its presence was unknown. In both instances in which the bacillus coli was present pus was detected in the urine.[3]

Cases of acute and sub-acute peritonitis.—Owing to the important part which the bacillus coli plays in acute peritonitis, it was considered advisable to examine the urine from some 20 cases of this disease. There were no symptoms pointing to an abnormal condition of the urine in any instance. By referring to the accompanying table it will be seen that the bacillus coli was cultivated from the urine on four occasions. In two examples the urine was quite clear and in two the condition of bacilluria was present. In three out of the four cases there was suppuration around the appendix. It is evident that there was no direct connexion between the abscess and the bladder, as there was no evidence of suppuration in the urine. The presence of the bacillus coli in the peritoneum in diffuse peritonitis, both experimentally and otherwise, does not necessarily lead to the occurrence of this organism in the urine.

TABLE I.—*Showing the Result of the Examination of Urine in 20 Cases of Peritonitis.*

No.	Variety of peritonitis.	General appearance of urine.	Nature of deposit.	Bacteriological result.
1	Appendix abscess.	Slightly turbid.	Bacilli.	Bacillus coli.
2	" "	Quite clear.	None.	"
3	Suppurative salpingitis.	"	"	"
4	Appendix abscess.	Turbid.	Bacilli.	"

[3] For much help in obtaining specimens of the urine from all classes of cases, I am greatly indebted to Mr. J. B. Adams, Dr. V. Z. Cope, Dr. F. S. Hewett, and Dr. Starkey Smith.

In the remaining 16 cases the bacillus coli was absent. In many instances a white staphylococcus was present and in a few a bacillus proteus was isolated from the urine.

Prostatic enlargement.—In 14 cases bacteriological and cytological examinations of the urine and of the prostate gland were made from cases of prostatic enlargement.[4] The bacteriological examination of the gland itself was made immediately after it was removed from the body at the time of operation. Pus was present in the urine in six out of 14 specimens examined, and of these cases the bacillus coli was cultivated in five instances and the staphylococcus albus in two, while the bacillus coli was found twice apart from the presence of true pus in the urine.

Examination of the urine in pregnant women and during the puerperium.—Numerous papers have been published on the so-called pyelitis of pregnancy, and the organism usually ascribed to be the cause of this condition is the bacillus coli. In many of these cases, however, the only proof that the bacillus coli was present in the urine appears to rest on the fact that a bacillus was seen in large numbers. Needless to say such evidence is worthless. There have been, however, several interesting papers published on the condition of the urine in such circumstances.

It is difficult to understand why the term "pyelitis" has been so often applied. In most instances the reason appears to be that there have been pain and tenderness in one or other loin and in some cases a definite swelling was detected and still further that symptoms which are usually associated with cystitis have been absent. In some instances, however, the whole urinary tract may have been infected. Vinay and Cade regard the cases reported by them as examples of pyelo-nephritis.[5] In three out of nine cases the bacillus coli is stated to have been present. They consider the occurrence of this organism in the urine of pregnant women suffering from pyelo-nephritis as indicative of an intestinal origin for the infection. I have not made a bacteriological examination of the urine in any case of pregnancy in which there was an acute infection of the urinary tract. In 45 instances the urine obtained from pregnant women or women recently confined has been subjected to a complete bacteriological examination, with the result shown in the table attached. In nine cases the bacillus coli was isolated from the urine and in one instance a bacillus closely resembling it but differing in two important cultural properties. Pus was absent from the urine in every instance but one, and in two cases a few leucocytes were present. It is thus evident that the bacillus coli is not

TABLE II.—*Showing the Results of the Examination of the Urine in 45 Cases of Pregnant Women and Women Recently Confined.*

No.	Period of (*a*) pregnancy; (*b*) puerperium.	General appearance of urine.	Nature of deposit.	Bacteriological result.
1	(*a*) two months.	Diffuse turbidity due to bacilli.	Bacilli.	Bacillus coli.
2	(*b*) five days.	Clear.	None.	"
3	(*b*) two days.	"	Bacilli.	"
4	(*b*) five days.	Turbidity.	Chiefly bacilli; also cocci, numerous leucocytes.	"
5	(*b*) eight days.	Turbidity.	Bacilli very numerous; cocci also present.	"
6	(*a*) six months.	Quite clear.	None.	"
7	(*b*) a few hours.	Clear.	"	"
8	(*a*) nine months.	"	"	"
9	(*b*) four days.	"	"	Atypical culture of bacillus coli.
10	(*b*) two days.	"	"	Bacillus coli.

[4] Prostatic Enlargement, by Cuthbert S. Wallace; Bacteriology, by Leonard S. Dudgeon (Oxford Medical Publications, Henry Frowde, London, 1907).

[5] La Pyélo-Néphrite Gravidique, L'Obstétrique, Paris, 1899.

infrequently found in the urine of pregnant women. There was complete absence in every case of any symptoms pointing to an abnormal state of the urine. No complications occurred which could be regarded as due to the presence of the bacillus in the urine. There is, therefore, conclusive evidence that the organism which is regarded as the common cause of acute infection of the urinary tract in pregnant women may be present in the urine in pregnancy and during the puerperium without producing any acute symptoms. (Table II.)

In 35 cases the bacillus coli was absent. In many of these a white staphylococcus, and in a few a bacillus proteus, was cultivated from the urine.

Conclusions.—The bacteriological examination of apparently normal urine obtained from various sources partly serves to explain how infection of the urinary tract may occur. Howard Kelly has already published evidence of a somewhat similar nature.[6] He says: "Cystitis would be discovered more often than it is if cultures were habitually taken whenever the patient makes the least complaint of dysuria, but as it is, the lesser grades of disturbance of the urinary system are rarely observed owing to the general neglect of this practice." "In my private practice it is my invariable custom to draw off a little urine when the patient is brought on to the operating table and make cultures from it. In this way the presence of infection is often demonstrated before operation."

THE OCCURRENCE OF OPSONINS IN NORMAL AND PATHOLOGICAL URINE.

The presence in normal and immune blood serum of a certain substance or substances intimately concerned with the question of phagocytosis is a matter of common knowledge. Similar observations have been made in the case of inflammatory exudates, and it has also been stated that the urine contains one or more substances of a similar nature. If the deposit of pus in the urine in cases of bacillus coli infection is carefully examined, it will be found that the majority of the cells do not contain bacilli, while those cells which are phagocytic seldom contain more than one or two organisms. On an average about 10 per cent. of the cells in the urine are phagocytic and there are seldom more than 10 or 15 bacilli in these cells. This remark usually applies equally well whether the cells are numerous or scarce. In a very few instances the phagocytosis is more marked than usual and this generally occurs when there is a considerable amount of inflammatory exudate in the urine. If we allow that pathological urine contains "opsonins" then it might be suggested that the urine in such cases had been de-opsonised owing to the masses of bacilli which are usually present. Eugene Opie,[7] in a paper recently published in the *Journal of Experimental Medicine*, has suggested from a number of experiments which he had made that the opsonic substance present in inflammatory exudate is absorbed, not only by micro-organisms, but also by the cells which are present in large numbers. He considers that this may explain in part the presence of the innumerable extracellular organisms which may be found in the serum of many purulent exudates.

Wright and Reid[8] have shown that the ascitic fluid in tuberculous peritonitis may contain little or no opsonin for tubercle bacilli. Opie has shown, however, in the paper above referred to that an inflammatory exudate produced by one micro-organism may contain little or no opsonin for this or for other micro-organisms. I have made numerous experiments with normal and pathological urine obtained from various acute and chronic diseases, both infective and non-infective, using washed normal leucocytes and colon bacilli. Many of the experiments were made with one strain of bacillus coli isolated from the urine in a case of acute infection. In many instances, however, in which the urine was obtained from cases of bacillus coli infection the organism used was the one which had caused the disease. In some instances of suppuration the urine, as soon as it was passed, was stored and incubated in tubes at 37° C. for varying periods, together with the pus cells which were present, it was afterwards centrifuged, and the phagocytic property of the clear fluid obtained was compared before and after digestion. All these experiments gave results of a similar nature which can be stated without entering into unnecessary detail. In most instances the urine as tested in the manner just referred to was found to possess little or no opsonic substance. Whether the urine has been obtained from a case of acute pneumonia, chronic nephritis, or from cases of acute or chronic bacillus coli infection, the degree of phagocytosis induced is often no more than can occur by replacing the urine in the glass tubes with normal saline. In a few instances the result as shown by the amount of phagocytosis was more than usual, but in every case without exception the opsonic property of the urine, as compared with the blood serum from the same case, was infinitesimal. In one or two instances higher indices were obtained by employing the patient's own organism rather than a foreign bacillus.

A further series of experiments were made by taking an equal volume of urine + blood serum + leucocytes + colon bacilli, and comparing the results obtained with normal saline used in place of urine. It was found that the urine did not contain any substance inhibitory to phagocytosis. Experiments made with an old laboratory culture of the bacillus coli and a culture of the same organism immediately after passing it through the peritoneum of a guinea-pig gave similar results. The degree of phagocytosis in each instance was extremely slight. It is important to remember, however, that in every experiment which has been referred to in this lecture normal washed leucocytes were used.

Conclusions.—There is no evidence from these experiments with the bacillus coli conducted *in vitro* to show that a substance or substances are present in either normal or pathological urine which increase or inhibit phagocytosis, except in a few instances. Slightly greater phagocytosis may occur with pathological urine than with either normal urine or saline in the presence of normal leucocytes, but it is extremely uncommon. Inhibitory substances have not been detected in the urine. It is unusual for phagocytosis to occur to any extent in the urine of patients suffering from either acute or chronic infection of the urinary tract due to bacillus coli. The evidence obtained from these experiments favours the view of a deficiency of inciter substances being the chief factor in the slight degree of phagocytosis rather than that of the de-opsonisation of the urine by bacilli or leucocytes.

AGGLUTINATION REACTION.

In many instances the agglutinative properties of the patient's serum were tested on his own bacillus and sometimes on a standard laboratory strain of the bacillus coli. It was found that a 0·1 per cent. solution of sodium chloride was most satisfactory for making an emulsion of the bacilli. In all instances a young agar or gelatine culture was employed. It may be stated at the outset that the agglutination reaction was found to be of little or no value in the diagnosis of this infection in most instances. There was sufficient agglutinin present in the serum to produce clumping of the bacilli in dilutions of 1 in 20 in only a very small proportion of the cases which were examined. Clumping with a dilution of 1 in 50 was found to be exceptionally rare. Fresh (a few hours old) anti-coli serum obtained from a horse was tested on a standard laboratory culture of the bacillus coli isolated from the urine. Well-marked agglutination was obtained with dilutions of 1 in 20, 1 in 50, and 1 in 100 within 30 minutes, and at the end of two hours with dilutions of 1 in 200, 1 in 500, and 1 in 1000. Fresh normal horse serum was similarly examined. This produced a slight reaction at the end of one hour with an emulsion of the same bacillus, using a dilution of 1 in 20. Extremely slight reaction was produced with a dilution of 1 in 50 and no reaction with the higher dilutions. It may be definitely stated that it is extremely rare to obtain a well-marked agglutination reaction of the colon bacillus with sera obtained from all classes of cases of bacillus coli infection in man.

In the Erasmus Wilson lecture in 1905[9] I gave the results which had been obtained by testing the serum from 68 cases of peritonitis upon the special strain of bacillus which had been isolated, and also the agglutination property of the serum from cases of chronic constipation and from those suffering from anæmia with septic stomatitis. In 52 of the 68 cases of peritonitis examined no reaction was obtained with dilutions as low as 1 in 10. In five cases slight reaction was present with this low dilution, but none with 1 in 20. In six instances a positive reaction occurred with dilutions of

[6] Howard Kelly and E. Herdon: The Vermiform Appendix and its Diseases, W. B. Saunders. London, 1905, pp 667–668.
[7] Journal of Experimental Medicine, vol. ix., No. 5. Sept. 21st, 1907.
[8] Proceedings of the Royal Society, 1906, No. 694.
[9] The Bacteriology of Peritonitis. Leonard S. Dudgeon and P. W. G. Sargent. Constable, London. 1905.

1 in 10 and 1 in 20. In five cases of appendicitis a well-marked reaction was obtained with dilutions of 1 in 10, 1 in 20, and 1 in 50 within 30 minutes.

INVESTIGATIONS ON THE PRESENCE OF OPSONINS FOR THE BACILLUS COLI IN NORMAL AND IMMUNE BLOOD SERUM.

Normal serum.—Numerous experiments have been made for the purpose of determining the extent of the variation in the so-called normal opsonic index for the bacillus coli. The blood of healthy men, apparently free from an infection by this organism, was employed for this purpose. The strains of bacillus coli used were obtained from the urine. The blood was tested with a standard culture and the result used for comparison with other strains of this organism. A culture of the bacillus coli, which had been growing for some time on ordinary media, was re-activated by passing it through the peritoneum of a guinea-pig, and normal blood was tested against cultures of this organism before and after it had been re-activated. It will thus be seen that numerous experiments were made with normal blood, sufficient to form an opinion of the range of variation in the index which can occur in the blood of apparently healthy people with the bacillus coli. The normal index obtained under these conditions varied from 0·6 to 1·5. In every experiment referred to on the estimation of the opsonic index at the very least 50 cells have been counted, while in many instances 200, 300, and more. The estimation of the opsonic index obtained by counting only 10 cells is absolutely worthless either for diagnosis or for treatment. It has been stated that a sufficient indication for clinical purposes may be arrived at in this manner, but for whatever object these results are employed they may be totally disregarded. The index obtained on one strain of the bacillus coli isolated from the urine is not necessarily an indication of the opsonic index of the patient's blood on the bacillus coli. In some instances the same serum examined identically in every particular—with the exception that a different culture of the bacillus coli was employed—has given quite different results. In each instance the bacillus was isolated from the urine.

EXAMINATION OF THE BLOOD OF PATIENTS IN WHOM THERE WAS NO EVIDENCE SO FAR AS COULD BE ASCERTAINED OF AN INFECTION DUE TO THE BACILLUS COLI.

These cases were examined in a similar manner to the preceding group. The blood of almost every well-known disease was tested on a standard culture of the bacillus coli isolated from the urine, and the result obtained was used for comparison with another culture of this bacillus. The patient's serum and normal serum were examined in the presence of normal washed leucocytes and the patient's blood as a whole was compared with normal blood. The serum was tested both before and after heating, and finally the patient's serum and normal washed cells were compared with the same serum and immune cells taken from cases of acute infections due to the bacillus coli and the streptococcus pyogenes. Without giving the results of each experiment in detail, it may be stated that in the large majority of cases examined the blood of acute and chronic infective diseases and non-infective maladies gave very abnormal results with the bacillus coli. The index in most cases was low, taken on the average about 0·5 and 0·6, while in some instances—e.g., one case of carcinoma of the stomach—it was found to be as high as 1·9 In three cases of diabetes the index was 1·2, 1·2, and 1·4 respectively. The replacing of the normal cells by immune cells obtained from cases of acute infections due to the streptococcus pyogenes and the bacillus coli certainly showed most striking results. In every instance out of some dozen experiments made with immune cells obtained from a very acute fulminating case of streptococcus pyogenes septicæmia it was found that the immune cells as compared with normal cells in the presence of the same serum failed to do the same amount of work. There was a drop in the index in each experiment to one and a half or even less by employing the immune leucocytes. Mr. Shattock and I have dealt with this question at great length in a paper quite recently communicated to the Royal Society. In these experiments although we employed immune leucocytes taken from a foreign source, yet the patient's own immune leucocytes were also examined. Our conclusions as a result of these investigations were as follows:—

That although the action of the immune phagocyte is usually higher than that of the normal cell, yet it may be lower or it may be equal to it. The cells vary in value like the serum, and the only method of arriving at an accurate estimation of the hæmo-phagocytic index is to allow the immune cells to work in the immune serum. By the method in commoner use too low an index is obtained if the patient's cells are acting above the normal level, and too high an index if they are acting below it.[10]

THE EXAMINATION OF BLOOD IN PATIENTS PROVED TO HAVE AN INFECTION DUE TO THE BACILLUS COLI.

In most instances patients suffering from an infection of the urinary tract due to the bacillus coli, whether it is acute or chronic, show a low opsonic and phagocytic index. In chronic cases the index was low in almost every example examined. Treatment by vaccines causes a gradual rise in the index which sometimes reaches to a considerable degree—e.g., 5, 6, 7, and 8. In some cases the index remains low in spite of treatment and so long as the patients are under observation never rises to any marked degree. Treatment by anti-coli serum often causes a marked rise in the index within a few days of the first injection. In some instances the index rises from below the normal to 2, or even over 3. The alteration from the low to the high index is not constantly produced by serum treatment, but occurs very often and it may occur simply by injecting normal horse serum.

OBSERVATIONS ON NORMAL HORSE SERUM AND ON THE SERUM OF HORSES WHICH HAD BEEN EMPLOYED FOR THE PREPARATION OF THE ANTI-COLI SERUM.

The three experiments referred to here are given to emphasise that fresh horse serum possesses to a considerable degree the power of exciting phagocytosis in the presence of washed human leucocytes:—

1. Normal human serum + washed leucocytes + colon bacilli. 50 cells contained 62 bacilli.
2. Normal horse serum + washed leucocytes + colon bacilli. 50 cells contained 53 bacilli.
3. Anti-coli horse serum + washed leucocytes + colon bacilli. 50 cells contained 104 bacilli.

In this instance normal horse serum possesses to only a slightly less extent the power of exciting phagocytosis as compared with normal human serum, whilst anti-coli horse serum has even a much greater effect. The serum employed in these experiments was tested within a few hours of bleeding. The anti-coli serum, after heating at 58° C. for 15 minutes, gave the following result:—

Anti-coli serum + washed leucocytes + colon bacilli.
50 cells contained 68 bacilli.

In every experiment the fresh horse serum was found to contain plenty of opsonin and in all instances the opsonic property of the immune horse serum was greater than that of the normal. All samples of serum, however, did not show the same degree of opsonic content, but in all cases the opsonic power of the serum was very evident.

Professor R. Muir[11] has stated that the anti-coli serum which he employed in his experiments on phagocytosis was devoid of opsonic content. He has kindly informed me that this serum was obtained from an immunised rabbit.

Conclusions.—The experiments which have been done on this subject hardly justify us in placing too much reliance on the opsonic and phagocytic index for the diagnosis of bacillus coli infections. The very wide variations obtained in the opsonic content of blood of healthy men, and still more so in human blood derived from all kinds of acute and chronic diseases, infectious and otherwise, are sufficient to show that it is difficult to say what is normal or abnormal. This is what one would rather expect. The colon bacillus is no doubt constantly producing various effects on the blood and tissues of man quite unrecognisable by ordinary methods. We only need refer to one example—viz., constipation, one of the commonest conditions from which people suffer, but which appears to have a considerable effect on the opsonic and phagocytic index for the bacillus coli.

It has been shown in these experiments that the same normal or immune serum in the presence of normal washed leucocytes and the bacillus coli may give an entirely different result when compared with another culture of this bacillus but isolated from a similar source. This fact is of supreme importance when we consider that the patient's own

[10] S. G. Shattock and Leonard S. Dudgeon, communicated to the Royal Society, Feb. 13th, 1908.

[11] Proceedings of the Royal Society, Series B, vol. lxxix., May 9th, 1907.

organism is not used in all cases for the purpose of determining the opsonic index.

It is clear from these results that an estimation of the patient's index on a standard strain of the bacillus coli may not be any indication of the true estimation of the amount of opsonin present in the serum for the colon bacillus which is causing the disease from which the patient is suffering.

THE BACTERICIDAL ACTION OF HUMAN AND HORSE SERUM.

The serum obtained from normal individuals and from others suffering from infection of the urinary tract by the bacillus coli was tested for the purpose of ascertaining whether it showed any bactericidal action on this bacillus. The ingenious method introduced by Wright was employed for this purpose. The serum used in these experiments was always quite fresh, not more than a few hours old, and a broth emulsion of a 24-hours agar culture of the bacillus coli was employed. The mixture of serum and culture was incubated at 37° C. for from 24 to 36 hours and the contents of the capillary tube were then tested in suitable media. Wright and Windsor have shown that normal human blood serum has a well-marked bactericidal action on the bacillus typhosus, but none on the staphylococci, the micrococcus Melitensis, and bacillus pestis.[12]

In the experiments which I have made on the action of normal and immune human serum on the bacillus coli, two-fold to one million-fold dilutions of a 24-hours culture were employed. In some instances the same sample of serum was tested on two strains of bacillus coli isolated from the urine. The volume of serum and of the bacillary dilutions were identical. It appears from these experiments that normal human serum does not possess any bactericidal action on the bacillus coli, with a few exceptions in which the growth of this organism was prevented in the $\frac{1}{100000}$ and one million-fold dilutions. Dilutions to this extent, however, may be disregarded. Immune serum produced a similar effect both before and after treatment with anti-coli serum. Normal horse serum and anti-coli horse serum were examined within a few hours of bleeding and were found to be devoid of bactericidal action. Several samples of standard anti-coli horse serum have been examined by this means and one specimen of serum in which the process of immunisation had only recently been completed. I have also found that the anti-serum before inoculation and the human serum subsequently to inoculation are devoid of bactericidal action. The sera of patients in whom the best results have occurred by treatment with anti-coli serum have not been tested for the absence or presence of bactericidal action. On the abundant evidence to hand, however, the beneficial action of the anti-coli serum cannot be dependent upon its bactericidal properties.

PROGNOSIS.

The first point to decide is whether the case in question is an uncomplicated example of bacillus coli infection or whether there is any other pathological change present in the genito-urinary tract. In both instances these remarks apply almost entirely to the chronic cases.

Tuberculosis of the urinary tract, which at times is complicated by a bacillus coli infection, must always be eliminated. Renal calculus is sometimes associated with the presence of the bacillus coli in the urine. New growths of the kidney and bladder, pyonephrosis, prostatic enlargement and stricture of the urethra are all at times associated with infection of the urine by the bacillus coli. It is thus obvious that before a prognosis can be given these various conditions must be eliminated. The presence of the colon bacillus in the urine in chronic cases does not necessarily imply that it is the sole cause of the patient's illness; occasionally the staphylococcus aureus appears to be the more important factor. In those instances in which a calculus is present in the bladder, and in cases of tuberculous cystitis, which develop a secondary infection, this is usually due to the proteus group and not to the bacillus coli. The acute infections of the urinary tract due to the bacillus coli are usually uncomplicated. The progress of the cases which I have seen has been satisfactory and up to the present time I have not met with an acute case which has ended fatally. Mr. H. L. Barnard has published a communication on this subject in THE LANCET in 1905[13] and owing to the statements which are made in this paper it is necessary to refer to it at some length. He says:—

> This infection seems to be of a transient character, for the urethritis and cystitis clear up spontaneously in two or three days, by which time the kidney shows innumerable points of suppuration, and if only one kidney be affected and this is promptly removed the patient makes an immediate recovery without further inflammation not only of the lower urinary passages but even of the wound. ..... When only one kidney is involved it would seem better to expose it through the loin and when it has been seen to be engorged and covered with sub-capsular hæmorrhagic abscess rapidly to excise it. This treatment was followed by immediate cure in four of the six cases recorded above. On the other hand, Cases 4 and 5 recovered with the more conservative measures of splitting, partial resection, and drainage. This method should probably be reserved for slight cases in which the infection is confined to one or two areas and for all bilateral cases.

And—

> I have met with no record of a case which has been left without surgical treatment, but I suppose death would follow in from 14 to 21 days from septic poisoning. In a few cases a perinephritic abscess might form and be evacuated safely, but this must be very rare.

Of course it is impossible to decide whether renal suppuration occurred in the acute cases I have had the opportunity of examining as surgical aid was not obtained. As Mr. Barnard recommends operative interference purely on the clinical features, it is evident that he regards these acute cases as all being accompanied by renal suppuration. It is evident from a study of the acute cases referred to in this lecture that it is quite unnecessary to adopt the drastic measures which he recommends in every instance. I have, moreover, known on more than one occasion exploration of the kidney to have been carried out in such instances of bacillus coli infection, but no suppuration was detected at the operation. Judging from my own experience the prognosis in this type of infection is satisfactory quite apart from surgical interference. In chronic cases, whatever treatment is adopted, the progress is extremely slow, but fortunately the inconvenience caused by this condition is often very slight.

TREATMENT.

I am afraid that owing to insufficient time it is impossible for me to give a detailed account of the methods employed in the treatment of the various infections of the urinary tract.

It is well known how rapidly improvement occurs in many cases of bacterial infection of the urine, apart from those due to the bacillus coli, by means of various drugs given internally. The success obtained by urotropin is often phenomenal, more especially in those cases in which the infection is caused by the bacillus typhosus. Unfortunately, however, the majority of these cases are due to the bacillus coli and, as far as my experience serves me, these fail to yield to any form of medicinal treatment. There are some people who claim to have seen beneficial results from the effects of calomel, helmitol, and urotropin, but the majority of cases which I have investigated had previously been treated with almost every known drug without producing any benefit. It seems, therefore, justifiable to assert that the cases which are stated to have been cured by these measures were either not due to the bacillus coli, or that the condition was relieved and not cured; or still further, treatment may have been commenced at a time when a spontaneous cure was taking place. Attention has already been drawn to the absolute lack of method employed for the diagnosis of the colon bacillus in the urine.

It is well known that urinary infections due to the bacillus proteus often rapidly yield to treatment by urinary antiseptics, either given alone or in conjunction with bladder washing. Still further, we must remember that a certain number of cases due to the bacillus coli are cured by natural means, quite apart from any form of treatment. Bladder washing is often resorted to, but here, again, I have never seen any definite beneficial effect. Massage undoubtedly proves useful in some of the chronic cases and in one instance of a girl whose condition resisted all methods of treatment a definite cure was brought about by a course of Weir Mitchell treatment.

Anti-colon bacillus serum.—Treatment by this serum has now been employed in over 50 cases. The first case treated by this means occurred in the wards of St. Thomas's Hospital. The patient, a male, aged 18 years, was admitted under the care of Dr. H. G. Turney. He presented all the symptoms which are only met with in the most acute cases of these infections. His urine, in addition to the turbidity produced by the number of colon bacilli, contained a thick deposit of pus and also blood. He received serum treatment and his symptoms rapidly yielded to its effects. Ten days later he had a relapse which was treated in a similar

[12] Journal of Hygiene, Oct. 1st, 1902.

[13] Multiple Abscesses of the Kidney due to Acute Ascending Infection of the Normal Urinary Tract by Bacillus Coli Communis, THE LANCET, Oct. 28th, 1905, p. 1243.

manner with a most excellent result. He finally left the hospital in good health, except for the fact that the bacillus could still be cultivated from hi urine.

I have now treated in hospital and privately 12 of these very acute cases, in most instances with satisfactory results. On five occasions, the effects of the serum were rapid and permanent, the patients never showing any return of the symptoms so far as I am aware. In four cases considerable benefit ensued, while in two instances the improvement was so slight as to be disregarded; in one case which was much less acute than the others, it seems probable that the joint pains and rashes, which resulted from the action of the horse serum, were almost worse than the disease itself. There is little doubt that some people do possess an idiosyncrasy for horse serum, and in such cases this method of treatment is undesirable. Unfortunately, until the serum is injected, it is impossible to recognise this condition. Calcium lactate in doses of 20 grains, three times daily, should be given at the time of injecting the serum. This drug appears in many instances to diminish the objectionable effects produced by the serum. It may also prove useful if employed at the time when these complications arise.

In the subacute cases serum treatment is decidedly useful, although much less so than in the severe type of the disease. In chronic cases it so occasionally does good that it may be regarded as a coincidence; usually it proves to be absolutely useless. There is not the slightest doubt that the use of this serum in all acute cases, and to a less extent in the subacute cases, is extremely valuable. From experience it seems best to give 25 cubic centimetres of the serum each day for three days.[14] If no effect is produced by this method of treatment it should be abandoned. It is most improbable that if the injection is repeated some few days later any benefit will ensue, while undesirable complications might occur owing to the supersensitisation of the individual by horse serum.

The vaccine treatment.—This method of treatment is now becoming widely employed mainly owing to the investigations by Sir Almroth Wright. Everyone who is acquainted with the extraordinarily successful results obtained in chronic staphylococcal infections by vaccines cannot fail to appreciate them. Unfortunately, the cases due to the bacillus coli do not give as satisfactory results as are obtained in the case of staphylococcus aureus and albus. I have now treated a large number of patients suffering from infection of the urinary tract due to this bacillus, but I am unable to record any material improvement except in a few instances. It is true that the patients often felt much better in themselves, but I have disregarded observations on this point if the urine has remained in much the same condition after treatment as before. Still further considerable improvement in the patient's resistance, as estimated by the "opsonic index," cannot be of much satisfaction either to the patient or the medical adviser, if the condition of the urine remains unsatisfactory. Unfortunately chronic cases not only show a great tendency to relapse, but the relapse often occurs with extraordinary rapidity. A chronic case has received vaccine treatment, the "opsonic index" has steadily risen up to five, six, or more, general improvement has taken place, and the urine has become quite clear; very soon a relapse occurs, and the condition is much the same as before. This is an important fact to remember, because it appears that cases in which a cure was considered to have been effected may pass into other hands with the urine turbid with colon bacilli. As previously stated, the relapse may occur with extraordinary rapidity. I have seen a case under treatment in which the urine had become quite clear and in which no bacilli could be found even after centrifugalisation, but on the addition of large quantities of the urine to culture media a growth was obtained of the bacillus coli. After an interval of 24 hours it became turbid as before.

The most difficult question which we have to decide is, Who is to be treated by vaccine and who is to be left to nature's efforts? It might be urged that all cases of bacilluria, and especially those with inflammatory changes in the urinary tract due to the bacillus coli, should receive vaccine treatment. Whether this is the correct view it is open to question. It is quite certain that every chronic case is liable to acute attacks, which are often of the greatest severity, and this fact should influence one in recommending treatment in cases of this infection. On the other hand, there are very many chronic cases who never have had any definite symptoms necessitating medical treatment, although the urine has been known to be turbid for a considerable time, and also there are many people whose urine is infected by this organism quite unknown either to themselves or to their medical advisers. There is, therefore, considerable difficulty in settling this question.

In conclusion, if a definite line of treatment is decided upon in chronic infections of the urinary tract due to the bacillus coli, the vaccine treatment should be adopted, employing the organism isolated from the patient's urine.

I am greatly indebted to many people for much valuable help concerning the clinical side of this investigation; to Dr. J. S. Fairbairn for certain data referring to the obstetric cases; to Dr. Dale for the supplies of horse serum; and to Dr. E. A. Ross, Dr. M. A. Cassidy, and Dr. W. O. Meek, co-workers in my laboratories, for much valuable assistance often asked for and freely given.

[14] Dr. T. Henderson Smith has published the result of some extremely interesting investigations on the absorption of antibodies from the subcutaneous tissues and peritoneal cavity. The conclusions which he arrived at from these experiments are as follows. 1. By intravenous injection the maximum amount of action is obtained at once. 2. Clinically, in urgent cases of disease to inject antibodies subcutaneously is not only to lose 2–3 days' time before the full action can be obtained, but to reduce the amount of action that the dose injected can have. 3. The amount of antibody present at any one time in the general circulation after intraperitoneal or subcutaneous injection is very much less than the amount injected (Journal of Hygiene, April, 1907, vol. vii.)

THE RADICAL CURE: CERTIFICATION OF INEBRIATES.[1]

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THERE must be many of us among this audience to whom the question of dealing with chronic inebriates, more particularly among the upper and middle classes, is one of paramount anxiety and irritation, because we recognise that the law, which is the instrument of the social system for its own protection and security, seems strangely impotent as a weapon against the cankerous pest of inebriety which rises with the sap and permeates the ultimate ramifications of the family life. There must be some reason for this supineness. How long are we to allow the chronic inebriate to bully his compeers, to ridicule the efforts made to reclaim him, to chuckle as he regards the abyss of despair and want into which his unassailable self-indulgence and extravagance have hurled his dependants, knowing, as he only too well does, that we are afraid of him; that being unable to shackle we can do little more than request him to handcuff himself and to ask him graciously to bring about his own sequestration for as long or as short a time as he condescendingly pleases.

Is it that there is a misplaced sympathy with this chartered abuser of the tavern or the club or that there is a maudlin sentiment about the right of the individual to self-indulgence if he chooses to spend his time and his means in his own way? Is it that there are invincible obstacles in the way of dealing with the temporary retrenchment of his liberty because of the general truth that the condition may be often one of short duration and that it is unfair to impose a certificate of unfitness, to place so powerful an instrument for enforced seclusion in the hands of people who have already some measure of legal rectification to resort to if they like to employ it? It may be that the difficulties in the way of determining the degree of inebriety that justifies the temporary or even permanent putting away of the individual are so subtle and so dependent on the idiosyncrasies and the personal equation of the friends and the medical advisers that the arguments for the adoption of so compulsory a procedure are not yet sufficiently cogent for the sanction of the law to statutes of so drastic a nature. To the medical mind it does seem that when a member of the community acts in such a way that he is made incapable of doing his work and providing for his family; when he is led into squandering his money, into using threats, bad language, and even violence against his nearest relatives; and when this behaviour is clearly due to inability to avoid, or reasonably to limit himself to, alcohol—it seems, I say, that such a person is a source of

[1] A paper read before the Medico-Legal Society on Dec. 17th, 1907.

danger to himself and others, and as such is a proper subject for elimination. To the lawyer, no less, must be a fit person for arrest in his runaway career the man who ignores the guiding posts which the law in its experience has placed to point out the straight path. To the lawyer it must be humiliating to feel his ineptitude in the face of the wanton dereliction of social obligations, the brazen turpitude of the man or woman who can revel unmolested in this besotted degradation, regardless alike of the moral, spiritual, and physical coördinates of regulated conduct.

Surely, then, an obligation lies on this combination of order and science, the Medico-Legal Society, to take a leading part in the measures to which from many parts the call arises, for the stoppage of the banal insolence of the incorrigible inebriate, or for the arrest of the incompetent pretender who is wrecking the foundations of order in the class to which he owes allegiance. I confess to the hope that we may receive encouragement in a forward and repressive policy from the legal and universal experience of his lordship, Mr. Justice Walton, who is presiding; for we all recognise that the acumen and perspicacity which distinguish his judgments will, if they are kindly vouchsafed to us in this direction, be received as an *obiter dictum* of the greatest value in helping forward what I take to be one of the most important duties which we owe to those who are down-trodden and not infrequently brought to the verge of ruin by people who, if at times they may be brought under the ægis of disease, are, on the other hand, little less than criminal. Before speaking of the ultimate measures which we ought to be able to employ when others fail I beg permission to place before this society a few points which we should do well to bear in mind, because I am not of those who hold that the way to prevent inebriety is to close all public-houses and to preach the doctrine of enforced total abstinence for everyone—on the one hand to exterminate a legitimate and useful trade, and on the other to bolster up the fad of an over-zealous minority. Governments which derive large profits from the sale of alcohol in one form or another, social systems which both in their public and private hospitality deem no gathering justifiable unless there is a prodigal display of fermented liquor, religious bodies which quote Divine authority for the permission to use vinous stimulants, doctors of medicine who publicly avow their belief in the advantage if not the necessity of limited amounts of drink—all these cannot but have rather tender consciences towards the people who from small and legitimate beginnings have grown, under the pretence of authority, to harmful excess. For it must not be forgotten that though water is the least taxed of foods it is not after all a quick food, and there are occasions when a quick food is required. Some emotional states are accompanied by (? are the cause of) rapid exhaustion, only to be met by a rapid restorative. But a restorative becomes an excitant when its simply restorative function is over; from this point of view alcohol is the balancing-pole which may, if wrongly or ignorantly used, become a source of danger. The old question, "Is alcohol a food?" may be answered in a qualified affirmative. It is ingested and decomposed to some degree; in so far it is a food, but when its ingestion is excessive it becomes a poison. Each person, therefore, is the arbiter of his proper quantity of alcohol; there are days when he may require some, there are others when he ought not to have it.

It is a known fact that nerve display and the coruscations of fancy flow more easily after use and exercise have made the paths, whilst the beginning may be tedious and is often painful. Alcohol accelerates the starting, but it may set up movement too fast for the strain-point of the material, so that both for starting under pressure and for whipping-up flagging energy the use of alcohol may be excessive. To be able to undertake suddenly, to support strain, to continue to carry on exhausting processes connote both health and strength, but it is only the strong and the mature who are in this enviable state, and that too for a limited time. People have to work and expend energy when their organs are not fit for it, and it is the fault of civilisation, of competition, that stimulation leading to excess is set up, such a result being unnatural to strong and healthy conditions. And this is true not only of alcoholic but of other habits; there are few who do not have to indulge sexually in excess of what they really wish; few who are not compelled to work when really disinclined, summed up in the phrase that it is often the necessity of living that kills. All organs have not always a coördinated power of resistance, for do we not often notice how a poor muscular system has to be flogged (by alcohol) to keep up with a pace-making brain, or how a weak brain may have to be stimulated under muscular stress. Please observe that I am for the moment holding a brief for the inebriate by endeavouring to show that, however deplorable the ultimate condition both to the victim and to his family, there are some extenuating circumstances due to him which possibly explain the reluctance and delay in taking extreme measures. Society is a hard whipper-in and in its strenuous efforts to keep the pack together it harries the halt and the feeble, unduly taxed to keep up with the younger spirits who have no sympathy with the lagging members, and it is oftener than not that from the ranks of these willing but wearied members are recruited the brigade whose treatment we are to discuss to-night.

I am very sorry for the people who are said to "do nothing," to be "of no occupation," prematurely ejected like a spent cartridge and sent to rot whilst the case is still sound and only requires recharging. There is too much new material; it does not pay to stop and pick up these *disjecta corporis membra*. "Let them rot," says Society, "it is the penalty of evolution and production!" As a fact, these "do nothings" often do a great deal but it is in an uncongenial direction; they are "unemployed" and so they fret and grizzle at their enforced idleness or else they eke out their time by easy vices, gambling, drinking, tedium-drowning, pleasure-making, and other arduous methods, backing up their social ostracism by a headlong flight towards extinction. And all that Society does is to nod approvingly and murmur, "Why try to preserve them? Let them drink and die. What are they to us!"

There is no getting away from the tyranny of social functions. See, for instance, how people at public dinners or private entertainments take more to drink than they do when they dine quietly at home. Why? Partly because it is pleasant and they get a good and expensive thing at another's cost—illustrating the remark of Sidney Smith that the wine he liked best and drank most of was "other people's"; but often because they are under the stress of having to make speeches and have to nerve themselves to be brilliant, whilst those who have to assist at the function by listening while away the time by extra libations. If only people would recognise that brevity is not only the soul of *wit* but also of *temperance*, there would be a reasonable prospect of success for those who argue against the deadly accompaniments of post-prandial oratory. Above all, what stands in the way of wholesome and (in moderation) harmless drink is the expense of it. About 100 per cent. profit is the price paid by the consumer who lives at a hotel. The duty on wine is the great bar to its consumption, driving men to a cheaper, more adulterated, and more potent beverage. The same holds with tobacco; everywhere taxation leads to adulteration.

The reasons why the inveterate inebriate has been allowed so long to exist are, then, perhaps because society feels itself to some extent culpable for condoning facility for the condition so easily acquired, and is loth to adopt measures which may savour of what the public call the "stigma of insanity." And yet this excessive drinking is now recognised to be due to disease in many instances, and by none is it more readily recognised as a condition due primarily to degeneration than by those who are most familiar with the inmates of homes for the inebriate. (See Dr. Branthwaite's Norman Kerr lecture before the Society for the Study of Inebriety.)

There are many people now under *lunacy certificates* whose cause of insanity is drink, but there are many cases where, though excessive drinking *is* the cause, we hesitate to use a power which we undoubtedly possess because the condition is a transient one and because the law is on the side of the patient when once the symptoms have disappeared, which they soon do. Such are cases of delirium tremens, and of acute alcoholic mania or melancholia, when not too intense in symptomatology, where there is probability of short duration, and where the means of treatment at home are adequate. There are, again, cases of chronic alcoholic insanity characterised by delusions of persecution, perhaps dangerous to themselves and certainly so to others, who are only fit for an asylum and who are very properly sent there. It is not for this class that we are in such urgent need of fresh powers. Our interference is required for persons who drink to excess—perhaps constantly, perhaps intermittently—who though rarely drunk in the sense that they are absolutely incapacitated are yet unable adequately to discharge their

obligations, who squander the money which should be for the family in racing, betting, and gambling, who pass much of their time in bed when they should be following their business, and who through absence of definite delusions or hallucinations cannot be certified as insane, who are ready to give promises of reformation which they do not keep but who are always on *dangerous ground*, on the vortex of doing something which renders them liable to penal offences, though quite able to give plausible accounts of their conduct and to sustain a certain amount of conversation on their actions. This is the condition where we want the law to help us, not so much perhaps for the sake of the agent as for those who are being slowly submerged and threatened with total extinction by a continuous current of banal excess which should be dammed-up or diverted. Why should this destructive, grinding, and oppressive creature be allowed to desolate his home, to endanger the good name of his wife and children, and to pauperise his dependents who ought to have the means of stopping the destruction which they can see is gradually overtaking them?

It seems at present as if the law takes no notice of acts unless they *actually cause harm* to self or others, not of continued evil practices which may do harm. Thus there is apparently nothing to prevent an inebriate acquiring a licence to carry firearms and buying a revolver as long as he does not threaten to use it or actually does use it—only when he actually *has* used it does he come within the clutch of the law, though all the time he is in such a condition that the impulse to use it may arise at any moment and the mischief be done before it can be prevented. Is such a possibility right either for the man himself or for society in general? A man may buy absurd and rotten stock as the dupe of people who take advantage of his condition, but the law does not come in until he is a bankrupt. A man may drink to the greatest excess, but if it is in his own house or his club or in a hotel no notice need be taken of it as long as he does not commit a breach of the peace or cause an obstruction and is not disorderly.

[Dr. Claye Shaw here gave some illustrative cases. He proceeded:—]

Now I come to the legal processes which I submit should be invoked, though I do not profess that they are complete in all detail; they, however, indicate the principle on which action should be taken and I commend them with confidence to your criticism.

Recognising that there are already many who owing to the acuteness of their alcoholic insanity have to be placed in asylums, where, however, they rapidly recover, and from which they have to be discharged, I would have the committee and the medical superintendent endowed with the power to discharge them for a term of probation, to be extended as long as deemed necessary, to an inebriate home. As they have recovered from their insanity it seems of doubtful advantage to detain them in the society of insane people and they should be changed to conditions less stringent and painful, there to undergo a buffer treatment which would gradually accustom them to take on again responsible duties. Of course, they would be released from the asylum on certificates giving to the authorities of the home the power of detention and treatment during the prescribed time. At present we know that patients may be discharged from public or private asylums on probation to their friends but the binding influence is not so coercive as if they were submitted to an annealing process, with the knowledge that they are still under government and ordered routine and that their ultimate liberty is dependent on the return to the power of inhibition.

In cases similar to those I have described it should be possible to place the patient in a home for inebriates upon the authority of two medical certificates, somewhat similar in form to lunacy certificates but free from certain objectionable phrases which exist in the latter. These certificates should be available for at least six months and should be capable of renewal for additional terms of six months if considered advisable by the authorities of the home and by the medical men who signed them; whilst under these certificates the patient would be allowed to transact such acts of business as he was deemed capable of by the home authorities and their superintendent, but special permission would have to be given for these acts of responsibility, and during the time of his detention personal liberty would be denied him except by special order of the superintendent.

I have considered the advisability of having the name of his wife or next-of-kin brought into the forms of certification and have concluded that it is necessary. It would perhaps be better for the future family harmony if the immediate members could be kept clear of unpleasant participation in the detention of the head of the house, who, especially when the liquor was out of him, would fret and fume at not being able to return, and would perhaps harbour hostile feelings against those who are keeping him in detention after his mind has become reinstated; but on the whole it is probably only right that their friends must undertake some risk, and therefore it may be concluded that some authorisation from a near relative must accompany the certificates either as a separate document or conjointly with the certifying doctor's. There would probably be less difficulty in getting the husband to send away the inebriate wife than in the converse process.

The necessity of having the order of a magistrate is a debatable point. The experience of certification in lunacy cases is not entirely in favour of the order of a magistrate. In urgency cases it is not in the first instance required, and it not infrequently happens that the magistrate, who from circumstances is not able to see the propriety of certification in the same light as the medical man, refuses to give his order, with the result that either the certificate cannot be obtained or else the patient has to be liberated, a proceeding which has before now led to disastrous results. If the order of the magistrate were nothing more than a formal official cachet that a certain process had been complied with there would appear to be no reason, beyond the question of delay, why it should not be made compulsory; but if it is to involve discretionary power then the harm or the uselessness of it is apparent because the arbiter is not always in a position to adjudge the validity of the premisses. On the whole we may be disposed to conclude that recourse to the order of the magistrate may be had as a testimony of an official nature that the process is formal. The form of certificate would be on the following lines:—

I, being a registered and qualified medical man, hereby declare that I have visited and examined , a residing at , and that I am satisfied that the said is an inebriate and is unable to control himself and to manage his affairs.

I accordingly recommend that be detained in the home for inebriates at for a period of calendar months, at the end of which time this certificate may be, if necessary, renewed for another period of months, or for such longer time as is considered by the authorities of the home and the friends of the patient to be advisable. Signed ——

I agree to the above certificate being issued with reference to .

Signed ——

It may be said that such a certificate is of too drastic a nature, that it gives too easily the power of secluding persons who are merely troublesome, and whose faults should either be tolerated or treated in milder ways; but it must be remembered that the state of things to be remedied is a serious one, that it is a dangerous one to the integrity of the individual and to the welfare of his family, that it is apparently the only way in which the individual can be taught the conditions of his enjoyment of liberty and of the cure of his bad habits. The patient thus compulsorily secluded ought to have safeguards, whilst under detention he would be visited by the Government inspectors, and he would have his legal remedies for improper certification just as the lunatic now has.

I am aware, of course, that in the case of criminals (who are often imbecile or degenerate) the duress of prison treatment is of no avail, that on release they repeat acts which again bring them under the ban of the law, but the object of the present scheme is to prevent persons (who, it is granted, are often the victims of disease or of degeneracy) from coming within the penal terrors of the law, of giving them the opportunity under favourable conditions of a rehabilitation by medical and moral means.

To carry out with all due safeguards the measures above proposed may be, I am aware, asking the country to undertake the fresh burden of possible increase in the number of certified inebriate homes and additional machinery for their efficient supervision, but what is incurred in one way may be saved in another by reducing the instances in which private charity and the public funds have to be requisitioned. Knowing, as we do, the amount of crime, of distress, of broken-up homes, of cruelty engendered by chronic alcoholism, are we doing our duty to the helpless victims of the extravagances of the persistent inebriate in allowing the authors of these evils to flaunt their immunity in our faces whilst we listen to the woes of the sufferers with helpless indifference?

I apologise for the imperfection of details in the plea, but it seems to me to be a great opportunity for this society to initiate or to assist in promoting legislation for the removal of this social stain, or if unable to give the time for formulating a distinct plan of attack at any rate to give its support to other associations which are working in the same direction. So long as people can have access to unlimited amounts of intoxicants we cannot hope for universal moderation, nor can legislation stop drunkenness, which is often as much a symptom of disease as delirium may be of a fever. We can teach people the necessity for moderation (and probably we have in this been to some extent successful), but alcohol is always a dangerous instrument, and we cannot be surprised if some who do not know how to use it as a servant find that it becomes a tyrannous master. Drunkenness is not the end for which alcohol is taken, but the social system which permits the insidious ensnarement of control, welling up finally to a paralysing incompetence for economic duties, should also provide the means for escape from the net, if even by temporary restraint of another kind, and it should resolve that the possession of such a power is not a futile asset.

Harley-street, W.

A CASE OF ACID INTOXICATION FOLLOWING THE ADMINISTRATION OF CHLOROFORM.

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CASES of "delayed chloroform poisoning" are probably of sufficient rarity to warrant the publication of the following brief notes.

The patient, a bright, well-developed, apparently healthy boy, aged three years and ten months, was admitted on Jan. 28th, 1908, suffering from phimosis. He was recently recovered from an attack of chicken-pox but showed no symptoms of renal complications. Circumcision was performed at 11 A.M. on the 29th. Two drachms of chloroform were given, the administration lasting about seven minutes. The anæsthetic was well taken. He slept after the anæsthetic but was fully roused during the course of the afternoon. He vomited at 5 30 P.M. after sips of hot water and several times after that until 8 30 P.M., the vomit so far being quite clear. At that time he was fully conscious and laughing and talking. He slept from 8.30 P.M. until 1 A.M. on the 30th, when attention was attracted by noisy respiration, with a marked rattle in the throat. The pulse now was rapid, of small volume, and feeble. The child could not be roused. The lungs were examined and found to be full of moist râles. He was given a medicine four-hourly containing liquor ammonii acetatis, ten minims; spiritus ætheris nitrosi, four minims; and vinum ipecacuanhæ, two minims. He continued to vomit on several occasions during the night, the vomit being of a dark green colour (bile) and smelling strongly of chloroform. He passed urine and the bowels were moved three times unconsciously during the night. His temperature did not rise above 99° F. during the night, but his pulse-rate was 120 and his respirations were 36 per minute. At 7.30 A.M. he was still unconscious, the pulse was weaker, but the respirations were less laboured. His condition improved slightly until 9 A.M., then he was pulseless, still vomiting occasionally. The lungs were again examined and found to be clear except for a few râles at the bases of the left lung. The abdomen was relaxed. All the reflexes were normal (extensor plantar reflex on both sides). The pupils were rather small but reacted normally to light. The tongue was moist but covered with a thick white fur. He still had incontinence of urine. At 10 A.M. the temperature had risen to 103°, the pulse could not be felt at the wrist, but the heart rate was over 200 per minute. He again vomited bile-stained fluid. He was ordered 30 minims of brandy by the mouth half-hourly and one-sixtieth of a grain of strychnine sulphate and five minims of ether hypodermically four-hourly. The administration of oxygen given warmed and in a continuous slow stream was commenced and continued until the end came. At 11.45 A.M. a slight general twitching was reported to have occurred twice. The pulse had improved again slightly, the pulse-rate now being 144; the temperature was 103° still. At 12.50 P.M. he vomited again. At 2 P.M., the temperature being still 103°, he was tepid sponged, which reduced it to 101°; the pulse-rate was then 144. At 4 P.M. the smell of acetone was distinguishable in the breath and a catheter specimen of urine was obtained and sent to the Clinical Research Association for examination. The breathing remained fairly good until about 5 P.M. and then numerous râles were heard all over the chest. From 7.15 P.M. he screamed frequently for half an hour. At 7.30 P.M. the eyes were fixed, the pupils were equal, somewhat small, insensitive to light, the corneal reflex had gone, and the conjunctiva was dry. Up to this time he had remained in a state of apathy, from which it was impossible to arouse him, but he swallowed small drinks; he now became quite comatose. At 8 30 P.M. the pulse was again weaker and only palpable occasionally. The temperature was 102°. At 9 P.M., the skin being very dry, a hot pack was given but it produced no action of the skin. Half-pint saline enemata containing 30 grains of bicarbonate of sodium were given four-hourly from 10 A.M. At 6 P.M. and at 8 30 P.M. nutrient enemata of egg, starch, peptonised milk, and saline solution were given, the first only being retained. Champagne, in half-ounce doses, was given half-hourly from 9 P.M. The child died at 11.45 P.M. on Jan. 30th, 36¾ hours after the operation and about 23 hours after the onset of symptoms.

The report from the Clinical Research Association on the urine read as follows: "The amount of urea in this specimen is 1·90 per cent., or 8·31 grains per ounce. The urine gives a distinct reaction for acetone but the reaction for diacetic acid is extremely doubtful." A report on a specimen of blood sent at the same time read: "This specimen gave no reaction for acetone but the amount was too small for decisive results." Unfortunately I was unable to obtain a post-mortem examination in this case.

The chief interest of the case lies in the rapidly fatal termination following the brief exhibition of chloroform for a minor and frequently occurring operation and the fact that no antiseptics were used such as might have contributed to the cause of death. My best thanks are due to Mr. F. Herbert Marson for permission to publish the notes on this case.

Stafford.

THREE CASES OF DELAYED CHLOROFORM POISONING.

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THE three following cases appear to be definite examples of poisoning by the delayed action of chloroform. Cases 1 and 2 died within 48 hours of the administration of chloroform, whilst Case 3 recovered after a severe illness marked by those symptoms which are now regarded as typical of the condition.

CASE 1.—A boy, aged two and a half years, was admitted to Liebert Ward on Dec. 3rd, 1907. He was a pale, poorly-developed child suffering from tuberculous disease of the right epididymis. Although his parents stated that he had had good health from birth his skeleton showed evidence of rickets and there was also a chronic eczematous condition of the scalp and forehead. The child had never had cod-liver oil and his diet had not been one calculated to lead to the deposit of fat in the tissues. The patient spent two days in hospital awaiting operation, and during this time the temperature and pulse were normal, there was no vomiting, and the urine yielded neither albumin nor sugar. No examination was made for diacetic acid or acetone. The child having been prepared by two drachms of castor oil by the mouth and a soap enema he was anæsthetised with chloroform on Dec. 5th about 11 A.M., the administration lasting for 20 minutes. No ethyl chloride was given and the course of the case was perfectly normal. The right testicle with a portion of adherent scrotal skin was removed as the tuberculous disease was found to have completely destroyed the epididymis and to have encroached also on the body of the gland. The involved structures were adherent to the skin and had broken down into one drachm of thick tuberculous pus. The adherent skin was very thin but had not given way. The wound was closed by silkworm-gut sutures and a small rubber tube was left in the lower angle. The operation was carried out on "aseptic" lines and no antiseptic agent came in contact with the

tissues throughout the whole course of the manipulations. The child recovered promptly from the anæsthetic and during the rest of the day seemed quite well. After recovering consciousness he twice vomited a small quantity of clear fluid. During the night and the following day the pulse and temperature were normal, the vomiting was not repeated, and his general condition was good. At 9 P.M. on Dec. 6th he suddenly vomited a quantity of dark "coffee-ground" vomit and was seen to be very restless with a strange "startled" expression of face. He was quite conscious, did not scream, and showed neither jaundice nor cyanosis. The temperature was 98·8° F., the breathing was hurried, the pulse was thin and beyond count, and the skin was very pale in colour. The odour of acetone in the breath was marked. The condition of the child remained as described until 3 A.M. on Dec. 7th, when he died. Death was ushered in by drowsiness and took place in the act of vomiting a copious gush of black vomit. No urine was passed from the first appearance of symptoms up to the time of death. It is much to be regretted that no examination was made of the urine after the operation.

The post-mortem examination showed that the wound was in a satisfactory condition. There was not the least evidence to the naked eye of any inflammatory change in its tissues. The right lung was firmly adherent at the apex and in this part of the lung there was a small focus of tuberculosis in a caseating condition. With this exception both lungs were normal. The heart though normal in consistence was unusually pale in colour. The thymus was rather above the normal size. The liver was enlarged; it weighed 14 ounces and extended for 1½ inches beyond the costal margin. It was of a bright yellow colour, greasy to the touch, and obviously in a condition of extreme fatty change. The spleen was normal. Both kidneys were normal in size, but were of a pale yellow tinge, especially in their cortical portions. The urinary bladder was empty. The pancreas was normal. The stomach contained four ounces of black "coffee-ground" fluid and had much tarry blood adherent to the mucous membrane, especially at the pyloric end. Neither erosions nor petechiæ were found in the mucosa. The intestines were normal, but the mesenteric glands were moderately enlarged and the largest of them showed on section a few scattered points of caseation. The brain and its membranes appeared to be perfectly healthy.

The organs were examined microscopically by Dr. W. Mair. The liver showed very advanced fatty degeneration. The fat globules were largest and the fat was present in greatest amount at the periphery of the lobules. Sections of the kidney showed extreme fatty degeneration in all the tubules, the lining cells being filled throughout with droplets of fat. The stomach, spleen, thymus, and heart yielded normal sections.

CASE 2.—A girl, aged eight years, was admitted to Liebert Ward on Dec. 13th, 1907. She was a well-nourished but pale rachitic dwarf with double genu valgum which had developed during her last year. There was evidence that the disease was still active since there was epiphyseal tenderness and the girl was disinclined to walk. There was no evidence of tuberculosis and her condition appeared in all other respects normal. Whilst awaiting operation there was no vomiting and the urine contained no diacetic acid or acetone. She had never taken cod-liver oil at any time. On the 16th a double osteotomy of the femur, followed by fixation in plaster-of-Paris, was done under chloroform anæsthesia lasting for 25 minutes. No ethyl chloride was given. The operation was on "aseptic" lines and no antiseptic agents came in contact with the tissues. The femora were very soft in consistence. During the 16th the girl was very restless, screaming at intervals, and tossing herself about in the bed. She seemed frightened and slept fitfully during the night. There was no vomiting but the urine passed at night showed the presence of diacetic acid. On the morning of the 17th the girl's condition was worse. She was constantly retching, her temperature was subnormal, her pulse was quick and feeble, and there was an odour of acetone in the breath. Later in the day copious vomiting of dark brown fluid set in, the odour of acetone became more marked, whilst the urine contained both diacetic acid and acetone and was passed in diminished amount. There was no jaundice or cyanosis and no delirium. On the evening of this day there was a last copious vomit, definitely "coffee ground" in character. During the night the girl became weaker but was conscious up to her death, which occurred at 9 A.M. the following morning. Urine was passed just before death and contained both diacetic acid and acetone.

The post-mortem examination showed that the operation wounds were perfectly healthy and the sawn ends of the bones showed no inflammatory change. The thymus was large, measuring 3 inches in length. The heart appeared to be normal in colour and consistence. The lungs were œdematous and full of blood but showed no consolidation. There was a large amount of intra-abdominal fat. The liver was not enlarged but showed an extreme degree of fatty change. The kidneys were normal in size. On section their cortex was yellowish and obviously fatty. The stomach contained a large amount of semi-digested blood adherent to the mucous membrane, which showed scattered petechial hæmorrhages. The mesenteric glands were much enlarged and were extensively caseous. The brain was apparently healthy.

A microscopical examination was made by Dr. Mair. The lungs showed passive congestion and œdema. The heart muscle was the seat of a considerable amount of fatty degeneration. Sections of the liver showed fatty changes, most marked in the peripheral and central zones of the lobules. The drops of fat were of all sizes. In the kidneys there was very widespread and extensive fatty degeneration in the tubules. The fat globules were small and grouped about the base of the cells. The spleen and pancreas appeared to be normal. The bone marrow from the line of section showed no change and there was nowhere any evidence of fat embolism.

CASE 3.—A boy, aged one year and nine months, was admitted to Liebert Ward on Nov. 19th, 1907, for the radical cure of a right inguinal hernia. He was a well-grown child but showed in a marked degree the skeletal changes of rickets. He had not had any cod-liver oil. The child was in hospital for two days before operation and during this time his pulse and temperature were normal and he did not vomit. About 10.30 A.M. on the 21st he was anæsthetised with chloroform and a "radical cure" of the hernia was performed. The operation was straightforward and did not occupy more than 15 minutes. No antiseptics were used at any time. The child recovered well from the anæsthetic and his condition for the remainder of the day was satisfactory. There was no vomiting. On the morning of the following day he vomited a large amount of dark fluid with all the appearances of altered blood. During the whole of this day his condition was very serious. He was very quiet, almost comatose, showing neither delirium nor fright. There was no cyanosis, but the face had a decided yellow tinge. During the day no less than six attacks of "coffee-ground" vomiting occurred. The bowels were moved six times and on each occasion the motions contained a large amount of tarry blood. The pulse was 120, the respirations were 24, and the temperature was 99·8° F. The operation wound was dressed in the evening and found to be quite healthy. The urine passed on the 22nd showed the presence of albumin, diacetic acid, and acetone. The breath smelt of acetone. On the following day, the 23rd, the child's condition was markedly better. The vomiting had ceased and fluid was eagerly taken and well retained. On the 24th the patient was clearly recovering. The temperature was normal, the pulse was 100, and the respirations were 20. The odour of acetone had gone from the breath and no trace of jaundice remained. The qualitative reactions of diacetic acid and acetone in the urine were present but in much less degree. From this time onwards there occurred nothing of note. The wound was completely healed on the ninth day and the child was discharged apparently quite well on Dec. 4th.

We do not seem to be any nearer to a solution of these mysterious cases. We do not know why certain children will develop a state of acid intoxication after the administration of an anæsthetic and will die with fatty degeneration of the liver, kidneys, and heart. Moreover, the position can only be described as disquieting since the cases are by no means of remote occurrence. In a total of 1500 cases of chloroform anæsthesia in my ward at the Manchester Hospital for Sick Children there have occurred four deaths attributed to the delayed action of the drug. It is not sufficient to seek for a cause in a tabulated list of the diseases for which these children are treated. There must be in such children some common predisposing cause which we are not yet able to recognise. The fatty changes which

are found on post-mortem examination are probably due directly to the anæsthetic and do not represent an antecedent condition. The naked-eye change in an organ is merely the total of its cellular changes and such changes may well happen within the last two or three days of life. The fatty kidneys present in these cases I have never seen in a considerable experience of post-mortem work in children dead from other causes. It is in the highest degree unlikely that such grave alterations could exist in the kidneys without yielding obvious clinical signs of their presence. The secret lies in the recognition of some condition common to these children and it is for this reason essential that all cases should be fully reported with any pre-operative factors which may have appeared to the observer as likely to have influenced the result. The satisfactory reporting of these cases is difficult since they occur as catastrophes in the midst of routine work. It is, however, on these lines that we are likely to arrive at a recognition of the predisposing cause. With the recognition of that cause we may be able to appreciate the note of warning or to establish a prophylaxis. In a previous paper[1] reference was made to the dangers of anæsthetics in children suffering from rickets, and the above series further confirms the view then expressed. Rickets in an active condition was present in each of the three cases. I have not been able to satisfy myself that the treatment of cases of delayed chloroform poisoning by alkalies or by intravenous saline infusion is of the least value. It is noteworthy that Case 3 recovered from an apparently hopeless position and was given neither alkalies nor infusion.

Manchester.

A REPORT ON TWO CASES OF DELAYED CHLOROFORM TOXÆMIA.

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I AM indebted to Mr. J. H. Ray and Mr. C. Roberts, surgeons to the Manchester Children's Hospital, for permission to report the two following cases. The microscopical report on Case 1 was done by Dr. W. Mair, pathologist to the same hospital.

CASE 1.—The patient, a female child, aged three years, was admitted to the Manchester Children's Hospital, Pendlebury, on August 20th, 1907. Her previous history was as follows. When 14 weeks old she was admitted to the same hospital for operative treatment of congenital talipes equino-varus. She was then a poorly-nourished infant, and after a stay of four months in hospital, during which time she had repeated attacks of diarrhœa and vomiting which were controlled for a time by dieting, &c., but always relapsed, she was discharged as an unfit subject for operative treatment. She had never received any treatment for rickets, such as a fattening diet and cod-liver oil and malt. On her second admission in August last she was seen to be a thin, anæmic child with a square-shaped head; the anterior fontanelle was widely open, the femora were curved, the radial epiphyses were much enlarged, and the ribs were markedly beaded; both feet were in a position of equino-varus. The child was prepared for operation by the administration of oleum ricini, 2 drachms, on the evening before operation, followed by a soap enema on the morning of operation. The only chemical antiseptic used in cleansing the feet was a compress wrung out in hydrargyri biniodidum 1 in 20,000, which was applied on the evening before operation, removed 12 hours later, and replaced by a 1 in 10,000 compress of the same antiseptic. The operation, which was aseptic throughout, was performed on August 21st by Mr. Ray and consisted in syndesmotomy in both feet. The anæsthetic used was chloroform and the time occupied, including induction, was 20 minutes.

The child recovered well from the anæsthetic; she vomited once during recovery; there was some immediate shock which soon passed off. 13 hours after operation she had a slight general convulsion which was repeated at intervals of about an hour for the next six hours; she also vomited frequently, the vomit having a "coffee-ground" appearance. She became very drowsy and 22 hours after operation was in a state of coma; the pulse was uncountable and very feeble. Examination of the urine at this stage revealed the presence of acetone; no diacetic acid could be detected. The child continued in the same state until death, which occurred 32 hours after operation. An hour before death she had another general convulsion; the vomiting of "coffee-ground" material continued at hourly intervals; just before death the respirations were of the "air-hunger" type. The child was never at any period of the illness jaundiced or cyanosed. There was never any sign of delirium.

Necropsy.—The post-mortem appearances were as follows. The liver weighed 19½ ounces, and was of a pale yellow colour; on section it was pale yellow. There was intense fatty change, every single liver cell showing one or more fat globules; the larger globules were situated in the peripheral zone of the lobule, the globules toward the centre being smaller. There was also a good deal of small round-celled infiltration around the bile-ducts. The kidneys weighed 1¼ ounces each; the cortex was of a pale yellow colour, both externally and on section; the capsule stripped easily. All the tubules showed a large deposit of fat in the form of minute globules situated for the most part towards the base of the cells; a few of the convoluted tubules showed necrosis. The heart muscle was unusually pale. The muscle fibre in many cases showed small fat globules. In the pancreas there were large areas where the secreting cells were in a state of necrosis; the nuclei stained badly or not at all and the protoplasm was crowded with fat globules. The lungs were in a state of passive congestion, with slight œdema; some mucus was present in the larger bronchi. The blood-vessels and capillaries were congested; the alveoli contained a considerable number of catarrhal cells which were filled with granules of a brown pigment. One small area in the section examined showed pneumonic consolidation; it was in close relation to a small bronchus and the exudate consisted chiefly of catarrhal cells. The thymus weighed one-half ounce. Nothing abnormal was found on microscopical examination. The spleen was somewhat congested; nothing abnormal was seen on microscopical examination. The stomach contained 2½ ounces of coffee ground material; the cardiac end showed small pin-point hæmorrhages in the mucous membrane, with much entanglement of mucus and "coffee-ground" material. The intestines appeared to be normal. The brain showed some œdema. There were no signs of meningeal inflammation.

CASE 2.—The patient, a female, aged 14 years, was admitted to the Manchester Children's Hospital, Pendlebury, on July 24th, 1907. Her previous medical history was good and on examination she was found to be a healthy-looking and well-nourished girl, with well-marked genua valga. She was prepared for operation in a similar manner to Case 1. The operation, which was aseptic throughout, was performed on July 26th by Mr. Roberts and consisted in an osteotomy of either femur to overcome the deformity. The anæsthetic used throughout was chloroform and the time occupied, including induction, was 15 minutes. The patient vomited five times immediately after operation and was afterwards comfortable except for pain. 24 hours later she commenced to vomit "coffee-ground" material and within the succeeding 24 hours had vomited 26 times; the temperature was not raised above normal, and the pulse was 100 per minute and regular. Examination of the urine at this stage revealed the presence of acetone and diacetic acid. The liver was slightly enlarged and painful on palpation. The patient complained of much general abdominal pains. The eyes were sunken; there was no jaundice, delirium, or cyanosis. On July 28th she vomited 13 times, the vomit being of the "coffee-ground" variety. The general condition and urine were as before. On the 29th there were ten vomits of the same character as before; the general condition was improving. On the 30th there were three vomits of the same type; the patient was much better. On the 31st no vomiting took place. Rapid improvement followed and on August 6th she was discharged home; her condition was good. Before discharge the liver was examined and found to be free from pain and tenderness and of normal size; examination of the urine did not reveal a trace of acetone or diacetic acid.

Treatment.—An attempt was made to treat the acid intoxication by alkalies; to this end sodium citrate and sodium bicarbonate were given in doses of half a drachm of each every four hours. The vomiting was so frequent that probably little, if any, of these drugs was retained in the stomach. Calomel in two-grain doses was also frequently given but could never be tolerated by the stomach.

[1] THE LANCET, Nov. 7th, 1908, p. 1341.

The points of special interest about these two cases are as follows. 1. The absence of any possibility of poisoning by antiseptics. 2. In both cases the operation wounds were surgically clean. In Case 1 the incisions were examined at the necropsy and found to be healthy-looking; in Case 2 the incisions healed by first intention and there was never any rise in temperature above the normal. 3. Stress has been laid on the fact that in these cases the children have often been nourished on fats, such as cod-liver oil. In Case 1 it was definitely determined that no such treatment had ever been administered; in Case 2 the patient had taken cod-liver oil at times but never continuously. 4. Both children were markedly rickety.

Manchester.

A FATAL CASE OF DELAYED CHLOROFORM POISONING.

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BY the kindness and courtesy of Mr. F. F. Burghard I have been permitted to publish this case which is not without interest.

The patient was a female child, aged 6½ years, who for three years had had tuberculous disease of the right hip. At the end of the year 1905 a large abscess formed in connexion with the right hip and this was opened on the front of the thigh under chloroform. After this operation the patient suffered from a severe attack of sickness and vomiting, which commenced about six hours after the administration of the anæsthetic and lasted for two days. A sinus remained in the thigh and in January, 1907, she was again anæsthetised with chloroform and the sinus was opened up and drained. After this operation the patient made an uneventful recovery from the anæsthetic.

In November, 1907, the patient was admitted into Paddington Green Children's Hospital with signs of disease in the neck of the right femur and upper end of the bone. There was a sinus on the front of the thigh but this only discharged occasionally. It was decided to operate one week later. The general health of the child previously to her admission is of interest in view of subsequent events. Her mother gave a very clear account of periodic attacks of sickness and bilious vomiting. At the beginning of her illness three years ago she was put into a Phelps's box, in which she remained for 18 months. During that time she had frequent attacks of sickness with green vomit, and as food was being pushed to the limit of digestion it was thought that the recurrence of the attacks might be associated with this. On being taken from her Phelps's box it was observed that the vomiting attacks stopped almost entirely. Within the last year she had only one bad attack, in September, and this was thought to have been precipitated by the excitement of going to the country. Apart from these and the hip condition the child had had no other illness and none of the specific fevers of childhood. On admission the patient was observed to be of a very neurotic and excitable temperament. She was well nourished and of healthy appearance. There was no cardiac or pulmonary disease and the urine contained no abnormal constituent. There was no acetone and no diacetic acid.

A week after admission Mr. Burghard operated. He removed the great trochanter and other tuberculous bone at the upper end of the right femur and then completely excised the old sinus. The whole operation took one and a half hours, and the amount of chloroform given was 1½ ounces administered on an open mask. After the operation the patient slept for two hours before regaining consciousness. In spite of having lost little blood she was very pale. The cheeks and lips were blanched and she seemed in a very exhausted condition. The pulse-rate was 112 per minute and moderately strong in force. She retched once or twice after regaining consciousness but did not vomit till soon after midnight, when she vomited twice. During the night she slept irregularly, and when awake suffered much from malaise and nausea, though she did not vomit again. During the next two days she appeared to be very languid and took very little interest in her surroundings, and answered questions as if with effort. This languor and apathy were in marked contrast to the bright intelligence which she possessed before operation. She occasionally cried out aloud but was otherwise quiet. Vomiting at this stage was seldom, but nausea and retching continued in spite of treatment. She had no sphincter control. She suffered from excessive thirst and this thirst was a marked feature of her illness from beginning to end. During the third day her apathy continued and now a faint odour of acetone could be detected in the breath. The pallor persisted as severe as ever, but on the morning of the fourth day the patient was noticed to be deeply jaundiced all over and the urine gave a faint reaction to the tests for bile but contained no acetone. Apart from this there was no alteration to be noted until the evening when about 9 P.M. she became wildly excited. Her eyes were staring and her expression generally was as if she had been struck with terror. The pupils were widely dilated but equal and reacted to light. She threw her arms about, shrieked aloud, and spoke incoherently. She became so violently restless that we had to confine her with a sheet to prevent her from leaving the bed. She retained reason enough, however, to indicate the presence of pain in the epigastrium. This was relieved by hot applications, but soon after the pain subsided she vomited twice and on both occasions the vomit was scanty and of typical coffee-ground material. This was the first and only occasion on which she had hæmatemesis. The odour of acetone in the breath became much more evident at this stage, but even then the urine was entirely devoid of it. During the night the restlessness continued, but on the next day she became much quieter though she was evidently more comatose. In the evening distressing air-hunger set in with markedly irregular panting breathing. This passed off in a few hours. On the next day this type of breathing returned. All nourishment that she had hitherto taken was refused. The only thing that she would consent to swallow was brandy and water and this she recognised at once and swallowed greedily. To overcome this difficulty milk and meat enules were given every four hours and these she retained. The urine on the sixth day contained a small trace of acetone for the first time and in addition a trace of albumin. There was no diacetic acid. The pulse tension became definitely higher. Œdema and anasarca appeared in the lower limbs, trunk, and face, and later ascites developed. The administration of oxygen was started with a view to assisting in the oxygenation and metabolism of the fatty acids in the circulation. This was continued for 36 hours and was accompanied by a very pronounced improvement in the child's general condition, as on the eighth day she had quite regained consciousness, recognised her friends, and swallowed her food without the slightest resistance. Nausea and retching which had been constant disappeared. Urine was passed in greater amount, though the actual quantity could never be determined, and acetone began to be excreted in greater amount. During that day she seemed comfortable and appeared to be doing well until the evening. She became restless again and passed through a phase of excitement exactly similar to that described above. Oxygen was given again but the patient died about one hour afterwards, but not in coma as she was quite conscious a few minutes before death.

The other treatment consisted of normal saline enemata of which six ounces were given every four hours from the beginning. Later sodium bicarbonate in the strength of 2 drachms to the pint was incorporated. On two occasions 18 ounces of sodium bicarbonate and saline solution were injected subcutaneously. When milk was taken sodium citrate was given along with it, but when this was refused it was given with the brandy and water. Stimulants used were strychnine, brandy, and adrenalin. The last was dropped into the conjunctival sac and proved of some value, as the patient became much brighter and improved generally after this treatment. The effect was transitory, however.

On post-mortem examination the liver was somewhat enlarged, of light yellow colour, and on squeezing it droplets of oil exuded from the cut surface. Microscopically there was very extensive and advanced fatty infiltration but no degeneration of cell protoplasm. The kidney, in addition to some catarrhal changes, showed some fatty infiltration in the convoluted and straight tubules. The intestines were filled with altered blood and showed some congestion of the Peyer's patches. The spleen and suprarenal bodies were healthy. The heart was healthy. The lungs were quite healthy except for a partially calcified gland at the root of the right lung. As regards the brain, there was slight œdema of the pia arachnoid membranes, but otherwise the brain was

healthy. The operation wound was healthy and showed no signs of suppuration.

To summarise. On Monday, Nov. 18th, 1907, the child was operated upon and was under the anæsthetic (chloroform) for one and a half hours. The anæsthesia was followed by three days of apathy and drowsiness accompanied by nausea and retching with occasional vomiting. On Thursday, the 21st, there were general jaundice and an odour of acetone in the breath. On Thursday evening restlessness, excitement, and delirium came on. Vomiting became more frequent and on this occasion the patient had hæmatemesis. Acetone odour in the breath became more perceptible. Restlessness continued till Monday morning, the 25th. On Saturday there was the coincident appearance of acetone and albumin in the urine for the first time, and from that date general œdema and anasarca appeared and increased. On Monday, the 25th, the patient became mentally much clearer and generally improved, but in the evening she relapsed into the state of excitement and died from heart failure at 1.30 A.M. on the following morning. The post-mortem changes have been described.

The special features in the case are, in the first place, the delay in the excretion of acetone in the urine, and, secondly, the unusually prolonged course of the illness. In similar cases previously recorded it has been seen, where acetone is excreted at once, or at any rate soon after the operation, that the chances of recovery are improved and that the longer the excretion is delayed the more unfavourable does the prognosis become. That acetone and its poisonous precursors were being manufactured before their excretion in the urine in any quantity was shown by the acetone odour of the breath three days before the urine contained acetone. In some cases previously recorded death has been found to occur in from 12 to 36 hours after anæsthesia, but the average duration is three or four days. This case ran an unusually prolonged course and did not terminate till seven and a half days after the onset of symptoms.

The history of cyclic vomiting prior to admission lends support to the view that cases subject to these attacks are also liable to so-called post-anæsthetic poisoning or fatty acid intoxication. What part is played by the anæsthetic in the production of these symptoms is at present not clearly understood. Similar symptoms with fatal results and similar post-mortem changes have followed anæsthesia with ether and ethyl chloride. Langmead records a case in which similar symptoms followed the administration of nitrous oxide, but this case recovered. All that can be said at present is that a general anæsthetic must interfere with fat metabolism in such a way that complete oxidation of fat does not take place and so we have the intermediate products of fat metabolism, β-oxybutyric acid and diacetic acid, passed into the circulation, giving rise to symptoms of fatty acid intoxication. Fatty liver is a constant phenomenon in all the post-mortem reports of previous cases of this sort. That some connexion exists between this and the symptoms is clear, but what the exact relationship is is in the meantime obscure.

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THREE CASES OF FRACTURE OF THE LOWER END OF THE HUMERUS.

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FRACTURES of the lower end of the humerus are of frequent occurrence in young active boys and girls and the result of ordinary expectant treatment is too often a faulty union with limitations of movement. The difficulties of getting good results by expectant treatment in many of these accidents should be well known, and the following cases bring out most of the points to which attention must be paid in dealing with this form of fracture.

CASE 1.—A boy, aged seven and a half years, whilst riding a pony on April 2nd was thrown by the pony putting its foot in a rabbit-hole. The boy pitched on his left elbow and fractured the humerus transversely at the lower end just above the olecranon fossa. He was brought to London and seen by Mr. Frank Romer who found the lower end of the bone displaced inwards and upwards and also rotated outwards; the joint was distended and there was much bruising. An attempt was made to reduce the fracture under an anæsthetic but it was not possible to do this and both flexion and extension of the elbow-joint were greatly limited. A skiagram taken by Dr. W. Ironside Bruce showed considerable displacement of the lower fragment and emphasised the impossibility of reducing the fracture by manipulation. After a consultation with Sir Thomas Smith an operation was decided upon.

This was performed on April 16th, when an incision was made about eight centimetres long in the mid-line at the back of the arm, the mid-point of the incision being over the fracture. The muscular tissue was separated down to the fractured ends of the bone which were gradually manipulated into position and fixed by means of a staple. The wound was closed by uniting the split muscle with two or three thread sutures and the skin incision was sewn up by a subcuticular stitch of thread. The arm was bandaged to an anterior angular splint. The wound was dressed on the fourth day and the stitch taken out on the eighth day; at the same time the splint was taken off and the arm manipulated. The arm was exercised each day more and more and the splint left off during the day. The boy progressed rapidly and in three months was able to play all games as well as ever. When seen in October the arm could be fully extended and flexed and for all practical purposes the arm was as useful as before the accident.

CASE 2.—A boy, aged seven and a half years, fell on a tennis lawn in June, 1907, and fractured his left humerus transversely at the lower end just above the olecranon fossa. The boy was taken home and anæsthetised and the arm was "set" and put on an internal angular splint. Next day the arm was skiagraphed, after which the boy was again anæsthetised and the position of the arm changed, it being now bandaged to his body with the left hand pointing over the right shoulder. The arm was taken down 12 days later and gently moved to a right angle and then replaced. This was repeated seven days later when the arm was put into a sling. The splint was left off a week later and the arm was daily exercised and massaged, but notwithstanding the treatment at the end of six weeks the flexion and extension of the arm were extremely limited. The boy was taken to see Mr. Romer, who examined the arm, the boy being anæsthetised. It was found that on extension after the arm had passed the right angle a few degrees the joint *locked* and no further extension could be made. The arm was x-rayed by Dr. Bruce on July 24th and the radiogram showed considerable displacement *backwards* of the lower fragment in the lateral view, and considerable *lateral* displacement in the postero-lateral view.

Operation was performed by me on July 29th. The proceedings were the same as at the last operation until the bone was exposed. The fracture was found to be firmly united, but on extending the arm the inner edge of the olecranon instead of fitting into the fossa came against the inner wall and could not be further extended because of this. It was obvious that the lower fragment had been rotated inwards in this case as in the last and had united in this malposition. The bone was sawn through at the seat of fracture with a fine Gigli's saw. The lower fragment was pushed into proper position and kept there by a staple which was put in at the back of the external condyle, keeping the fragments together. Extension was then made on the forearm and it was possible to extend the arm nearly fully.

The after-treatment of this case was similar to the preceding one and the result has been equally satisfactory. The boy was last seen in November, when he could use his arm as well as before the accident. He could not touch his shoulder with his fingers, but excepting this all other movements were normal and he could play any game with ease and comfort.

CASE 3.—A girl, aged 12 years, while getting over some iron railing on Nov. 31st, 1907, fell and pitched on her left elbow. She was taken back to the house close by and attended to by Dr. A. H. Spicer. When seen next day (Dec. 1st) by Mr. A. Chune Fletcher and myself in consultation with Dr. Spicer the arm was considerably swollen but no crepitus could be obtained and the joint movements were smooth. Although there was not any positive evidence of fracture it was thought desirable to have a skiagram taken. This was done two days later, when a fracture was seen to exist just above the condyles, the lower fragment being rotated forwards, but there was no actual separation seen and no other displacement. It was decided when the swelling had gone down that the arm should be examined under an anæsthetic

to see whether any actual separation did exist on manipulation and to see also whether it was desirable to endeavour to force the lower fragment back into position. This was done a few days later and it was found that the fracture was a greenstick one with no separation or limitation of movement and no attempt was made to replace the lower end into position. The after-treatment consisted of massage and gentle exercise, no splint was worn, and the arm was carried in a sling. When last seen about four weeks after the accident the arm could be moved without any trouble or pain in all directions. There was still some swelling, but this was rapidly disappearing. Mr. Romer who saw the case with me has since sent me the skiagrams of an exactly similar accident which he had seen in a boy 12 months previously who, since the accident and after similar treatment, had been passed into a naval college where he was carrying out his education.

FIG. 1. FIG. 2. FIG. 3. FIG. 4. FIG. 5.

Fig. 1 shows a lateral view of the normal joint.
Fig. 2 shows the lateral displacement which occurred in Case 1 viewed anteriorly.
Fig. 3 shows the antero-posterior displacement viewed from behind and also shows the rotation of the lower fragment which by altering the position of the olecranon fossa produced the limitation of movement in Case 2.
Fig. 4 shows the bones fixed in position by the staple.
Fig. 5 shows the anterior displacement of the condyles without separation in Case 3.

Remarks.—These three cases of fracture at the lower end of the humerus are of considerable interest both to surgeons and practitioners. Anyone is supposed to be able to set a fracture, but when the result is not good the "setter" is usually blamed no matter what the difficulties may have been. The first question to decide is whether there is a fracture or not. Where the fracture is obvious and the displacement marked this will present no difficulties. When there are no displacement and no crepitus but considerable swelling, as in Case 3, and the indications are negative, it is better not to give a positive diagnosis that there is no fracture but to wait until a skiagram can be taken. It is well recognised now that a skiagram should be taken in every case of injury where a fracture may possibly occur, and the help obtained from a good skiagrapher both as to diagnosis and treatment is of the greatest importance and value.

The next question is whether an operation should be done or not. The expectant treatment carried out originally in Case 2 is one which often produces a good result with union in proper position and normal joint movements, and it was only after the fracture had united that the limitation of movement was definitely made out.

As these operations are conducted in the present day the danger of sepsis is so slight that it must not be considered as a bar when the disadvantages of a crippled arm (especially in a boy) are thought of. When a *recent* fracture is operated on there is no doubt but that the draining of the tissues at the time of the operation apart from the fixing of the fragments is of great benefit and accelerates convalescence considerably. This is a clinical fact upon which I have remarked before when writing on this subject and was well shown in Case 1 where there was considerable extravasation of blood into the tissues owing to the force of impact at the time of the fracture.

Lateral displacement and rotation of the lower fragment are the two conditions which mainly call for operation in these cases. The amount of displacement and the rotation when present can always be shown by a skilled skiagrapher if two skiagrams are taken on different planes at right angles to each other. In Case 1 it was not possible to overcome the lateral displacement without an operation, and any other treatment would have left the boy with a hopelessly crippled arm. In Case 2 at the operation the fractured ends seemed to have moulded well together but the skiagram showed that the position was faulty and the fault was covered up by callus which was, of course, not shown in the picture. The looking of the arm was well seen when the joint was exposed and no kind of exercise would have overcome it. An operation at this period—that is, after union has taken place—is always more difficult and probably attended with more risk than when it is undertaken soon after the accident, also the atrophy of muscles is much greater when a term of expectant treatment has occurred and recovery is proportionately delayed.

It is, therefore, of the first importance to know as positively and as soon as possible the position of the fracture ends. This knowledge is best obtained at the hands of a skilled skiagrapher which does not necessarily mean anyone who can take a skiagram. When the photograph shows marked displacement of the fragments which manipulation is unable to bring into position and when the range of flexion and extension is limited by this malposition the only chance of getting a normal and useful arm is by means of an operation. When, as in Case 3, the injured bone is viewed through the fluoroscope the bone lesion can be well seen and all the movements of the arm can be viewed by the surgeon. In such cases massage and proper exercises should be carried out from the beginning and no splint is necessary. By these means the swelling rapidly disappears, the muscles do not atrophy, and after from seven to ten days the arm can be used for all ordinary purposes.

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THE PATHOLOGY AND ETIOLOGY OF INTUSSUSCEPTION FROM THE STUDY OF 1000 CASES.

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I.—SOME POINTS IN THE PATHOLOGY AND METHOD OF GROWTH.

THE figures contained in this series of papers and the theories based thereon are the result of the investigation of over 1000 cases collected from the records of the Hospital for Sick Children, the West London Hospital, from cases published in THE LANCET and the *British Medical Journal* for the last 17 years, and from the Transactions of the Clinical and the Medical Societies and the Society for the Study of Disease in Children. For permission to use these cases I am indebted to the honorary staffs of the respective hospitals. In addition I must acknowledge the use of the very valuable series of cases reported by Mr. A. E. J. Barker,[1] Mr. C. P. B. Clubbe,[2] Dr. H. J. Dunbar,[3] Mr. B. Pitts, and Mr. P. W. G. Sargent.[4] Space does not allow me to acknowledge individually the many observers whose cases are included in the tables, but where special mention of any case is made I trust a full reference is given.

The title of the paper obviously covers a very wide field and I shall endeavour to confine myself to the consideration

[1] Archiv für Klinische Chirurgie, Band lxxi., Heft 1.
[2] Brit. Med. Jour., June 17th, 1905.
[3] Scottish and Medical Surgical Journal, August, 1906.
[4] St. Thomas's Hospital Reports, 1900.

of some points which are, I believe, unrecognised or which have been unduly neglected. I wish in particular in this paper to draw attention to certain factors in the method of growth of intussusceptions and to show that the classification requires modifying, inasmuch as the cases hitherto classed as ileo-colic do not in reality warrant that name.

Definition and Description.

Intussusception is the invagination of one part of the bowel into that immediately adjoining it. As a rule the gut is invaginated from above downwards, but in rare instances this arrangement may be reversed and the gut be invaginated from below upwards. The name "retrograde intussusception" is given to this variety. For purposes of accurate description certain names are applied to the different portions of the intussusception. The description has suffered severely from the redundancy of the names used. As one part of the bowel passes inside another it follows that there must be three complete tubes or layers seen on cross section. The outer layer is also known as the ensheathing layer, the sheath, the receiving layer, or the intussuscipiens. The inner layer is called the entering or third layer, while to the middle layer the terms second or returning layer are often applied. In this paper the first, second, and third layers will be called respectively the sheath, the returning, and the inner layers. Between the returning and the inner layers are found mesentery, glands, and occasionally other parts of the alimentary canal, such as the appendix and rarely the duodenum or other parts of the small intestine. The term "intussusceptum" is applied to the returning and inner layers and includes any tissue situated between these two layers. The apex of the intussusception is the most advanced portion of the invaginated gut, and this, as we shall see later, is usually the starting point of the invagination. At the apex the inner and returning layers become continuous with each other. The neck of the intussusception is the place where the returning layer becomes continuous with the sheath and where the inner layer and mesentery enter the intussusception. The neck is the only part of the intussusception which is constantly changing with the growth or diminution in the size of the tumour. On looking at a cross section of an intussusception it is at once apparent that the returning and inner layers have their serous surfaces in apposition, while the returning layer and the sheath have their mucous surfaces opposed to one another.

Method of Growth.

The apex of the intussusception remains constant or changes only to a very slight degree in circumstances which will be fully dealt with later. Now why should an intussusception grow in this way? and what is the reason that it does not increase in size by more gut passing through the returning layer and becoming everted at the apex to form part of that layer? The reason is not far to seek, if we consider for a moment the forces which are available. The growth of an intussusception is due to muscular force and that muscular force is supplied by the involuntary muscle of the intestinal wall.

It would seem that the sheath is the only part of the intussusception which can influence the growth of the intussusceptum, the returning layer is turned inside out, and peristalsis, even were it possible in this position, will pass from the apex to the neck, tending to expel the inner tube from its interior, while the inner tube for its part may contract and extrude its contents but has no power to worm its way through the returning layer. Any idea of the inner tube passing through the middle is discountenanced at once by the stiff and œdematous state which congestion causes the apex rapidly to assume, rendering it quite impossible for the inner tube to roll round and become part of the returning layer. The sheath then must supply the whole of the muscular force but it can only act on the intussusceptum as a whole and can have no influence on the passage of the inner through the returning layer. These considerations render it quite impossible for an ileo-colic intussusception to occur by the method which up to the present has been accepted without question. I shall refer again to this point.

Let me now consider for a moment the ways by which it is possible for the sheath to act upon the intussusceptum. There are two layers of muscular fibre in the intestinal wall, the first circular, the second longitudinal. As the former layer is nearly three times as thick as the latter it is probably by far the more important in the physiological movements of the intestine. But ordinary physiological action is insufficient to account for the growth of an intussusception. If a foreign body is introduced into the lumen of the gut it is passed onwards by the contraction of the circular fibres behind it, pushing it forwards into a portion of the gut where the contraction of the circular fibres has been inhibited by the activity of those immediately above. Onward motion in the case of the foreign body is a comparatively simple matter and is all accounted for by peristalsis. Such a mechanism cannot, however, be invoked in the case of intussusception as the gut is unable to contract behind a mass of which the gut itself is an integral part, and contracting on it will merely tend to grasp it firmly and prevent onward progression. If the circular fibres contract they at once anchor the whole intussusception and effectually prevent an onward movement taking place in the more distal parts. Therefore by a process of exclusion in this pathological condition we must attribute the greater importance to the longitudinal fibres. The contraction of the circular fibres at the neck must cause an inhibition of the circular fibres below and cause relaxation of the sheath while at the same time it forms a fixed point from which the longitudinal layer may act and draw up the loose sheath over the intussusceptum. When relaxation of both layers takes place the sheath will tend to elongate in both directions so that some will roll over at the neck and become the returning layer. By successive contractions and relaxations the sheath will creep up the uninvaginated gut. This process of creeping up and rolling over will continue without any great change in the position of the intussusceptum so long as there is slack bowel below which can be drawn up to form the sheath. But as soon as all the slack bowel is used up the gut below becomes the fixed point and contraction of the longitudinal fibres and the sheath must now draw down the neck of the invagination and the intussusceptum will, for the first time, be actively pulled through the sheath. With every spasm now the mesentery holding the neck will be pulled upon and stretched and there will be a constant slight progression and retrogression with each contraction and relaxation. The severer spasms are accompanied by pain and reflex contraction of the abdominal muscles but the contraction of these muscles will merely raise the intra-abdominal pressure which will act equally in all directions. The abdominal muscles can have absolutely no influence on the progress of the intussusception until the apex advances well into the rectum; there acting purely as a *vis a tergo* they tend to expel the contents of the bowel and increase the congestion of the invagination. My contention is, therefore, that for the onward progression of the intussusceptum the longitudinal fibres of the sheath are the all-important factor, the circular fibres merely contributing a fixed point on which they may act.

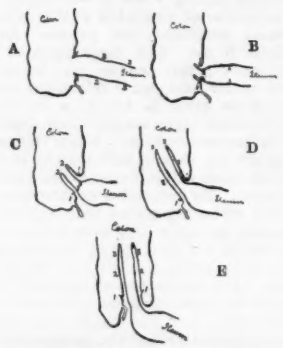
The mechanism of spontaneous reduction which sometimes takes place is due in a great measure to the exact reversal of the mechanism just described, but there is in addition the great advantage of the sheath being able to act in a true antiperistaltic manner. The circular fibres can contract beyond the apex and so drive up the intussusceptum, while at the same time forming a fixed point from which the longitudinal fibres may act and unroll the neck of the intussusception. In spontaneous reduction, therefore, we see that the two sets of fibres play an equally important part. Although it is only in recent years that the pathology of intussusception has been studied, Mr. Jonathan Hutchinson[5] as far back as 1874 laid down as the correct method of reduction a mechanism which we now know to be an exact copy of nature's method of reduction, for his suggestion shortly is to imitate the action of an antiperistaltic wave and to press the intussusceptum out from below, while at the same time the sheath is rolled back at the neck. If this is the correct method of growth it is clear that the apex of the intussusceptum remains a fixed point, and the only site at which change takes place is at the neck where the sheath rolls over to become the returning layer, or the reverse process takes place according as the intussusceptum advances or recedes in the lumen of the gut. The constant position of the apex is recognised in all forms of intussusception except the ileo-colic variety, and it is necessary to spend a few moments in the examination of what is supposed to occur in this form of invagination.

An ileo-colic intussusception is said to start at the ileo-cæcal valve by the lower end of the ileum prolapsing through the lips of the valve into the ascending colon. The inner

[5] Transactions of the Royal Medical and Chirurgical Society, vol. lvii. 1874, p. 31.

layer of the invagination is said to slide through the returning layer for a variable distance until its further passage is blocked either by the traction of the mesentery or by the valve refusing to admit any more gut; the intussusception then proceeds to grow in the same manner as all other intussusceptions, the valve and cæcum rolling over at the neck to become the returning layer. This means that the apex of the intussusception is at first the continually changing point as more and more of the inner tube passes in and rolls round to become the returning layer, the neck during this period remaining unchanged, but after the block the

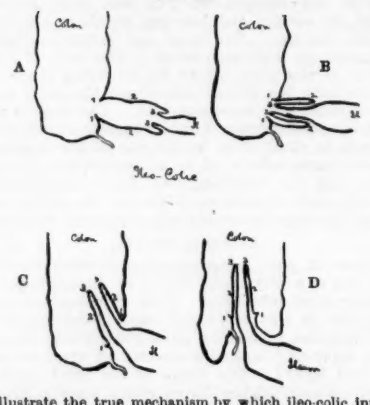
FIG. 1.



To illustrate the mechanism by which it is supposed that ileo-colic intussusceptions are formed. The numbers denote fixed points on the ileum. A. Normal relationships. B. The mucous membrane at 1, the valve, has started to prolapse, and 2 is in process of passing through the valve. C. 2 now forms the apex and 3 is sliding through the valve. D. 3 now forms the apex and 2 has rolled round from the *inner* to the *middle* layer. E. 3 has followed 2 round from the *inner* to the *middle* layer and now no more ileum can slide through. Up to this time the apex has been constantly changing while the neck at the valve remains constant; from now on the apex remains constant while the change takes place at the neck as the valve and cæcum pass into the returning layer.

apex remains constant and the scene of the change is transferred to the neck. It is a little difficult to understand why this explanation has gained credence and is accepted apparently without question at the present time. No writer, so far as I am aware, has even attempted to explain the mechanism by which it might possibly be brought about. The only way I can explain the origin of this view is to suppose that the frequency of invaginations with the valve at the apex was recognised long before the method of growth was understood, and it was at once assumed, when the valve was found at the neck or at a variable distance from the apex, that the ileum had prolapsed through it but that the starting point of the invagination was still the same as usual. No one will deny that specimens showing this condition are far from uncommon, but merely because the valve is found in this position seems to me to be wholly insufficient grounds to warrant us calling to our aid an explanation which we do not admit for any other form of intussusception. If the arguments I have previously used to show that the sheath is the active agent in the onward passage of the intussusceptum be correct, what new factor is there residing solely in the lower end of the ileum which enables the returning layer to propel the inner layer or the inner layer to propel itself through the valve? I hold that there is none, and that the formation of an ileo-colic intussusception is to be explained in exactly the same manner as all other forms of intussusception, that is, the apex of the intussusceptum, and not the ileo-cæcal valve, is the starting point of the invagination. (Fig. 2.) The starting point would then be in the ileum at a variable but no great distance from the valve. Let me illustrate this by an example. Suppose that an invagination began 6 inches above the valve and passed by the ordinary mechanism downwards. By the time the apex had been projected 3 inches through the valve, the valve would be at the neck, 3 inches of ileum being in the inner and 3 inches in the returning layer. If the surgeon operated at this stage he would without doubt say this is an ileo-colic intussusception with the valve not yet involved. And suppose the intussusception grew and the apex passed on for another 3 inches the valve would now be halfway up the returning layer and the surgeon so finding it would style this an ileo-colic intussusception in which the valve and cæcum participated. By supposing, then, an enteric origin for them, I believe all so-called ileo-colic intussusceptions can be explained and the arguments in favour of this being their true formation are as follows. 1. The ileo-cæcal valve is the narrowest part of the intestine; it is in consequence the most unlikely spot for the inner to slide through the returning layer. 2. The ileo-cæcal form of intussusception is so common and the ileo-colic form comparatively so rare as to make it unlikely that the extreme end of the ileum should in some cases, for reasons unknown, assume a totally different mechanism of the invagination. For be it remembered that according to the accepted view the ileo-cæcal valve is the starting point of both varieties. 3. Owing to the anatomical arrangement of the layers there is no force present which renders it possible for the inner tube to pass through the returning layer. 4. In an ileo-colic intussusception there is no way of excluding the possibility of its having started in the lower end of the ileum and passing through the valve by the same mechanism which operates in all other portions of the alimentary canal. 5. Many instances of enteric intussusceptions are met which, if growth continued as far as the valve, would be indistinguishable from what is now called ileo colic forms. 6. Many intussusceptions have been reported as ileo-colic varieties although there was an ulcer, a polyp, or even a Meckel's diverticulum at the apex, conditions which are well recognised as being the starting point of intussusceptions in

FIG. 2.



To illustrate the true mechanism by which ileo-colic intussusceptions are formed. The numbers denote fixed points on the ileum. A. An enteric invagination starting at 3. B. 3 remaining the apex passes through the valve, while 2 rolls round at the neck from the *outer* to the *middle* layer (cf. Fig. 1). C. All the ileum of the sheath has now passed round the neck into the middle layer. D. Growth proceeding, the valve, cæcum, and colon roll round into the middle layer. As in all other forms of intussusception, the apex has remained constant.

the lower portion of the ileum. 7. Ileo-colic intussusceptions can, as I have just demonstrated, be easily explained as having taken place by the ordinary mechanism if it is only recognised that they are enteric in origin and have not *started* at the valve. We are therefore driven to the conclusion that the so called ileo-colic form should not be described as a separate variety of intussusception and this class is accordingly grouped with the enteric cases.

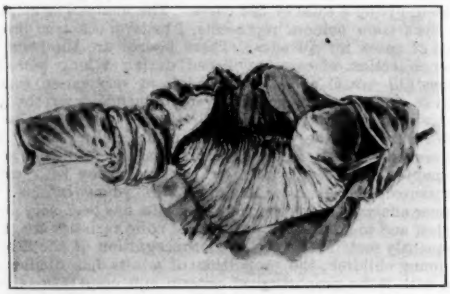
The Rôle of the Mesentery.

As growth proceeds and more and more gut becomes involved the included mesentery begins to exert an influence on the shape of the tumour. As the mesentery attaches the intestine to the posterior abdominal wall it tends to check the onward passage of the intussusceptum. Its drag is of course chiefly felt along the attached border of the inner and returning layers, so that the intussusceptum assumes a curved shape, the concavity being towards the root of the mesentery. If the sheath invests the intussusceptum closely, as in enteric forms, the whole tumour must become curved, but in the ileo-cæcal variety where the sheath is voluminous, the curved intussusceptum may lie in its lumen without

modifying its external appearance. Frequently ulceration takes place in the mucous membrane of the sheath opposite the apex of an old-standing case, and spontaneous rupture of the sheath, should it take place, almost always occurs opposite this spot. Both these lesions are due to the unequal pressure exerted by the bent form of the intussusceptum. The amount of gut which the sheath is allowed to envelope depends largely on the amount of mesentery that is available; where only a small amount is present it is impossible for a very extensive invagination to take place; where it is ample, several feet may be included. The appearance of the tumour in the rectum, however, does not necessarily imply a mesentery of any extraordinary length, for the gut passes round the arc of a circle the centre of which is the root of the mesentery, and any increased length which is needed may quite well be accounted for by the extremely lax manner in which the peritoneum is attached to the posterior abdominal wall in young infants. In ileo-cæcal intussusceptions it is no uncommon thing for the valve to protrude from four to six or even more inches beyond the anus. I think I am quite correct in saying that a mesentery sufficiently long to allow this journey to be accomplished is never met with in normal circumstances, and the great increase in length found in intussusceptions is due to the mesentery borrowing largely from the parietal peritoneum. With a very small amount of traction an ascending colon which has at first no mesentery worthy of the name may be made to stand away from the posterior abdominal wall to the extent of two or more inches.

The spiral twist which is sometimes found in extensive invagination, and which may occasionally be one of the obstacles which prevents reduction, is the direct result of the intussusceptum travelling in a corkscrew-like manner round the root of the mesentery. In addition to these influences, which are well recognised as being exerted by the mesentery, we may, I think, attribute yet others to its action. It has already been stated that in all forms of intussusception the starting point remains at the apex of the intussusceptum. This is, however, only partially true, for in certain circumstances a slight movement does take place. It does not consist, however, of a movement of the inner tube through the returning layer, as has been supposed, but rather in the downward movement of the returning layer over the inner tube. The drag of the mesentery, besides causing the curved appearance, will anchor the attached margin of the lumen of the gut and tilt the apex to one side; the opposite

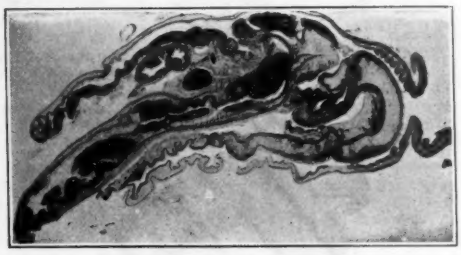
FIG. 3.



Sketch from a specimen in the Museum of the Hospital for Sick Children, Great Ormond-street, to show the downward movement of the cæcal wall at the apex of an ileo-cæcal intussusception.

free margin will then form the apex. The free anti-mesenteric border of the returning layer may now slip down some little way beyond the opening of the gut. This sliding may take place to the extent of 1½ to 2 inches, so that the opening of the gut is separated by that distance from the apex and faces directly against the sheath (see Figs. 3 and 4). Such a movement will most readily occur where the inner tube is small and the returning layer lax, as in the case of the ileo-cæcal variety; in this variety also the free border of the apex is formed by the wall of the cæcum situated below the ileo-cæcal valve. The cæcal wall being voluminous and absolutely uninfluenced by the mesenteric check may slide down without hindrance to its fullest extent and so replace the true apex or starting point of the intussusception. When reduction is brought about in the usual manner the ileo-cæcal valve will be reduced before the cæcum appears, and it is this phenomenon which has caused so many careful observers to class as cæcal many intussusceptions which were in reality ileo-cæcal in origin. I hope I have made clear that because the cæcum is the last part to be reduced it by no means follows that it was the first to be invaginated. From the study of the accounts given of a very large number of intussusceptions classed as cæcal I am driven to the

FIG. 4.



Longitudinal section through an ileo-cæcal intussusception (kindly lent by Dr. H. J. Dunbar) to illustrate the slipping down of the cæcal wall. The sheath of the intussusception has been dissected away.

opinion that there are very few indeed in which the ileo-cæcal valve could be excluded from being the starting point. On the other hand, of course it must be admitted that the converse must hold true, and many of the instances now called ileo-cæcal might be due to the primary invagination of the cæcum which has become inverted like a large Meckel's diverticulum. Though there is no absolute way of disproving this I think it by far the more unlikely of the two views.

There is yet another result of the slipping down of he anti-mesenteric border of the returning layer and one which has led to much false speculation. The apex being the part farthest from the heart will show

FIG. 5.

Diagram to show the cæcal wall slipping down and replacing the original apex, its great swelling, and the consequent formation of the dimple on reduction.

the results of interference with its circulation to a greater extent than any other portion. In addition the extreme apex receives least support from the sheath. Small wonder then that the apex becomes swollen to such an extent as to form sometimes the tense globular mass which is often such a serious bar to reduction. When reduced, however, the apex, owing to its stiff and œdematous condition, retains to some extent the shape it was forced to assume while forming the apex of the intussusceptum. Hence the depression in the wall of the gut so familiar to all under the name of the dimple. This dimple on investigation is found to be a depression lying between two raised and thickened lips which are situated transversely to the long axis of the gut on the border opposite the mesenteric attachment. The dimple is therefore nothing more or less than the

most advanced, and in consequence the most œdematous, portion of the intussusceptum and is caused by, and not the cause of, the invagination. Here, again, the assumption that the last part reduced was the first part invaginated is obviously fallacious. In the ileo-cæcal form the dimple is often seen on the outer wall of the cæcum, this being the part which has slipped down in front of the valve. In those

FIG. 6.

Sketch of an intussusception reduced after death showing the position of the dimple in the cæcal wall.

rare cases in which the intussusception has been reduced by operation and returns again within 24 hours it is quite probable that the dimple is the direct cause of the second invagination, but only in these instances can it be classed among the causes.

Classification and Varieties.

Intussusceptions are classified according to the portion of intestine in which the invagination commences. Up to quite recently the usual forms described were the enteric, the colic, the ileo-cæcal, and the ileo-colic; the first two varieties were again subdivided according to the exact portion of the small or large intestine in which the intussusception began. Thus the enteric were divided up into jejunal and ileic, the colic into those starting in the cæcum or appendix, ascending, transverse, or descending colon, sigmoid or rectum.

This classification is the simplest and most complete and with the exception of the name ileo-colic gives a correct idea as to the starting point of each variety. The ileo-colic form is of course ileic. But this simple classification has to its detriment been elaborated. The disparity in the size of the small and large intestines makes it very easy for the sheath when formed by the latter to become folded on itself and so

TABLE I.

—	Enteric.	Jejunal.	Ileic.	Meckel.	Ileo-colic.	Ileo-cæcal.	Cæcal.	Appendix.	Colic.	Double.	Multiple.	Total.
Mr. Eve	—	—	—	1	4	11	5	—	—	—	—	21
Mr. Barker ...	5	1	—	—	10	36	—	—	2	—	—	54
Dr. Dunbar ...	1	—	9	—	1	44	—	—	2	3	—	60
Mr. Clubbe ...	1	—	—	—	12	64	—	—	3	20	—	100
St. Thomas's Hospital Reports	6	1	1	1	5	69	—	—	3	10	—	96
Great Ormond-street Hospital	4	—	11	—	15	59	—	—	1	—	—	90
West London Hospital ...	1	—	1	—	2	17	—	—	1	1	—	23
Literature ...	13	2	18	11	18	170	6	4	15	7	9	273
Total	31	4	40	13	67	470	11	4	27	41	9	717
All Ages.	32	10	38	15	37	302	6	5	32	19	12	506

appear as a double intussusception. Leichtenstern[6] was the first to apply a compound name to such a form. He gave the name of ileica-ileo-colica to a variety which began in the lower ileum and passed downwards to the valve; owing probably to the swelling the apex did not pass the valve but the intussusception became bodily intussuscepted into the colon. Since Leichtenstern's paper appeared the complexity in the names has rapidly increased until in a recent paper in the Transactions of the Clinical Society there was some hesitation expressed as to whether the correct name for a particular form of intussusception was enteric-ileo-colic ileo-cæcal, or enteric-ileo-colic-ileo-cæcal-colic. I think the hesitation displayed was perfectly warranted. If these compound names are meant to give any idea of the extent and position of the intussusception they seem to me to be a signal failure and to be no advance on the old-time classification.

It is often no easy matter in the limited space of a small incision and with the short time at the disposal of the operator to tell the exact place from which an intussusception started; especially is this the case in the region of the ileo-cæcal valve. Cæcal, ileo-cæcal, and those commencing in the extreme lower end of the ileum are all very similar in appearance. Many intussusceptions called cæcal are, I think without doubt, ileo-cæcal in which the cæcal wall has slipped down later. All ileo-colic and perhaps a few classed as ileo-cæcal really begin in the lower part of the ileum and should therefore be classed as enteric.

TABLE II.

—	Cases under 12 years (717).	All ages (506*).	Leichtenstern's cases (479).	
Ileo-cæcal	67 per cent.	60·8 per cent.	44 per cent.	
Enteric	21·6 ,,	25·6 ,,	30 ,,	38%
Ileo-colic	—	—	8 ,,	
Colic	4·3 per cent.	7·3 per cent.	18 ,,	
Multiple and double	7·0 ,,	6·1 ,,	—	

* 271 cases are excluded which were drawn from hospitals dealing solely with children.

In the table of cases (Table II.) I have given in the first column an analysis of 717 cases under the age of 12 years; in the second column 271 cases, which were collected from hospitals which dealt solely with children, have been subtracted and the 60 cases above that age, which have appeared in the journals during the same period, have been added, giving a total of 506 cases. The analysis so obtained in the second column represents, I believe, the true proportion of cases for all ages. These figures are the results of the collection of cases published during a long period of years (17 years) and are derived from very varied sources which precludes any possibility of influence from the preconceived ideas of any one individual. The figures in the third column of the table are those of Leichtenstern. The difference between Leichtenstern's analysis and my own is accounted for very largely by the frequency with which intussusception is now diagnosed in young infants. In former analyses the proportion of adults has been very much larger, and in adults the enteric and colic varieties are more frequently met. With the readier recognition of the disease in young children, the proportion of adults has diminished and with it the proportion of enteric and colic intussusceptions, while the percentage of the ileo-cæcal form which is so common in infants has naturally risen. This is shown by the fact that in the statistics from the cases of the Royal Hospital for Sick Children, Edinburgh,[7] the number of ileo-cæcal cases was as high as 76 per cent.

In the 155 cases under 12 years, in which the small intestine was stated to be the starting point of the disease, the exact site was not noted in 31 cases, the jejunum was affected in 4, and the ileum in 120. This last figure includes 67 ileo-colic intussusceptions and 13 in which a Meckel's diverticulum was invaginated. In the 506 cases of all ages (excluding 271 cases drawn exclusively from children's hospitals) there were 130 enteric intussusceptions, in 32 the site was unstated, in 10 the starting point was the jejunum, in 88 it was in the ileum, and of these 37 were ileo-colic and 15 were due to invagination of a Meckel's

[6] Viertel Jahrschrift f. d. Prakt. Heilk., Prague, 1873.
[7] Scottish Medical and Surgical Journal, August, 1906.

diverticulum. In the first series the proportion of cases in the jejunum and ileum was as 1 is to 30 and in the second series as 1 is to 9; not only in each case, therefore, did the numbers in the ileum greatly exceed those in the jejunum, but the great bulk of those in the ileum started in the last 3 feet of this portion of the small intestine. These figures strongly controvert the statement made by Sir Frederick Treves[8] that the proportion of jejunum to ileic intussusceptions was as 4 is to 1.

The duodenum on account of its fixity is never the starting point of the trouble. It may, however, be involved in an extensive ileo-cæcal intussusception by the mesentery dragging the duodenum, pancreas, and even the pylorus of the stomach up and into the neck of the tumour. Delépine[9] reported a case five months old where the first and second parts of the duodenum "had evidently been dragged in by the meso-colon." See also references.[10] The proportion of cases in which a Meckel's diverticulum was the cause of the invagination is much higher than it should be owing to the fact that such cases are nearly always published, while many ordinary intussusceptions never reach the journals.

Attention has already been drawn to the rarity of the colic varieties in children; few but cæcal forms are reported under 12 years of age and most, if not all, of these are ileo-cæcal intussusceptions in which the cæcal wall has slipped downwards. My figures are not sufficient to draw any conclusion as to the commonest site of invagination of the large intestine; excluding cases called cæcal the site was only mentioned in 21 occasions, and the numbers were fairly evenly distributed over the whole length of this part of the alimentary canal.

Retrograde intussusceptions.—Retrograde intussusceptions are those in which the lower portion of bowel is invaginated into the part above. Retrograde intussusceptions are quite commonly seen in the post-mortem room but very rarely met with during life. It is quite certain, however, that they sometimes do form during life and are capable of giving rise to the same acute symptoms as the descending variety. Gairie[11] reported one 12 inches long at the junction of the ileum and jejunum, Harrison[12] published an account of a case in which three inches of the descending colon was invaginated into the transverse colon. Both were fatal cases. Besnier,[13] Nothnagel,[14] Mott,[15] and Langstaffe[16] have each recorded similar cases (see references).[17]

(To be continued.)

TWO CASES OF ANTHRAX.

BY JOHN S. CLARKE, M.B., B.C. CANTAB., M.R.C.S. ENG., L.R.C.P. LOND.

THE following two cases of anthrax are of interest as the disease is not a common one, and these two cases show some rather unusual points. They occurred simultaneously in two men, a farmer and a butcher's assistant respectively, who had four days previously killed and dressed a diseased bull, apparently neither having the least idea of the cause of the animal's illness. The men noticed nothing unusual in the viscera, which lay about after the killing and were partly eaten by the pigs, of which none apparently suffered any ill-effects. On June 2nd, four days after killing the beast, each noticed a pimple on his arm.

CASE 1.—The farmer, aged 28 years, called at my surgery in the evening of the above date to ask me to look at a sore which he had on his arm. The site of the lesion was the upper antero-external surface of the left forearm; the sore was about one inch in diameter with a depressed centre and a ring of low vesicles around; the central depression was purplish red but not black—the sore could not have been described as a typical anthrax pustule. There were no œdema and no pain. The axillary glands were enlarged. The patient's temperature was 100·4° F. and he complained of frontal headache; his tongue was furred and there was some general constitutional disturbance. This patient had attempted no local treatment. With the kind assistance of Dr. J. Cropper films were promptly prepared from the fluid of the vesicles and stained with carbol-fuchsin. A few large bacilli were seen occurring singly and in chains of two and three on end. These were compared with a known slide of anthrax bacilli and found to be very similar. That night, chloroform being administered by Dr. Cropper, the pustule was excised with a margin of sound skin, the subjacent fatty tissue being removed at the same time; pure carbolic acid was then applied and the wound was dressed with sal alembroth gauze soaked in perchloride of mercury lotion. On the following morning the temperature was normal and the wound was dressed. At 9 P.M. that evening the temperature was again up and remained up the next day, accompanied by some headache; the day following the temperature fell and remained normal. The wound was later dressed with moist boric lint and allowed to granulate up.

The excised pustule was sent to the Clinical Research Association; cultures were made from it and gave a growth of anthrax bacilli. Sections were cut and the report stated that the bacilli in the slide were rather few and far between and had to be looked for carefully.

CASE 2.—The butcher's assistant was only heard of when operating on the first case. The first part of the history of this case has been already given. The lesion here was on the back of the wrist and was only of the size of a sixpenny-bit. The pustule was far more typical than in Case 1; there was a dark central eschar. There had been considerable pain in the sore, coming on a day or so after he first noticed the pimple, which had led the patient to poultice it. He had no constitutional symptoms and had continued at his work. When seen the wrist was slightly œdematous and there was some redness around the sore; the axillary glands were enlarged. In this case the pustule was drawn forward and frozen with ethyl chloride; its base was transfixed and the sore was excised. The after-treatment was the same as in Case 1. Both cases healed up well.

Cultures from this case were made by the Clinical Research Association and gave a growth of anthrax bacilli. A slide made showed very numerous anthrax bacilli, it hardly being possible to find a field under the microscope free from them.

These two cases show a curious difference between one another. In Case 1, while the lesion was the larger, the bacilli were the more scanty; there were no pain and no œdema but constitutional disturbance was marked. In Case 2 the pain began early and the sore was teeming with bacilli. It may perhaps have been due to the site of the lesion being exposed to chafing by the edge of the coat sleeve that in the latter case there was pain. The application of the warm, moist dressings by the patient may have been a factor in producing such swarms of bacilli. The absence of constitutional symptoms in Case 2 is somewhat odd seeing their occurrence in Case 1. In Case 1 the patient himself suggested that he had a "touch of influenza." This may have been the case, but the onset of symptoms was gradual and, further, there was little, if any, influenza in the neighbourhood. Neither patient noticed any scratch or prick while handling the beast.

It may be added that the diseased animal referred to was the cause of a legal prosecution later, which was, however, abandoned because, in the opinion of the Bench, the evidence was not considered sufficient to secure a conviction.

Magor, Mon.

[8] Intestinal Obstruction, p. 144. London, 1899.
[9] Transactions of the Pathological Society, 1891, p. 124.
[10] Bulletin de la Société Anatomique, 1864, p. 37. Band: Journal Générale de Médecine Chirurgie, et Pharmacie, 1805, xxiv., p. 209. Fitzwilliams: Essay on Intussusception, with an Account and Analysis of 103 Cases (Thesis Ch.M. Edin., 1907), Cases 3, 14, and 38.
[11] THE LANCET, 1882, p. 647.
[12] Dublin Medical Press, 1845, p. 148.
[13] Thèse de Paris, 1857, p. 52.
[14] Die Erkrankenkungen des Darmes, Vienna, 1896.
[15] Peninsula Medical Journal, Detroit, 1876, p. 157.
[16] Edinburgh Medical and Surgical Journal, 1807.
[17] Haven: American Journal of the Medical Sciences, 1855; Duchaussoy: Memoirs de l'Académie de Médecine, 1859, vol. xxiv.; D'Arcy Power: Transactions of the Pathological Society, 1886, p. 240.

THE BRITISH MEDICAL BENEVOLENT FUND.—The annual general meeting of subscribers to this fund was held on Feb. 18th, Sir William S. Church, Bart., being in the chair. Sir John Tweedy was unanimously elected President of the fund and the vice-presidents, trustees, committee, treasurer, and honorary secretary were re-appointed. The annual report and the treasurer's financial statement were adopted. Hearty votes of thanks were accorded to the editor of THE LANCET and to the editor of the *British Medical Journal* for their support of the fund; to Mr. Guy Elliston, general secretary of the British Medical Association, for his help in the collection of subscriptions; and to the honorary auditors, Messrs. Deloitte, Plender, Griffiths, and Co., by whom the accounts have been for so many years regularly audited.

TANSINI METHOD FOR THE CURE OF CANCER OF THE BREAST.

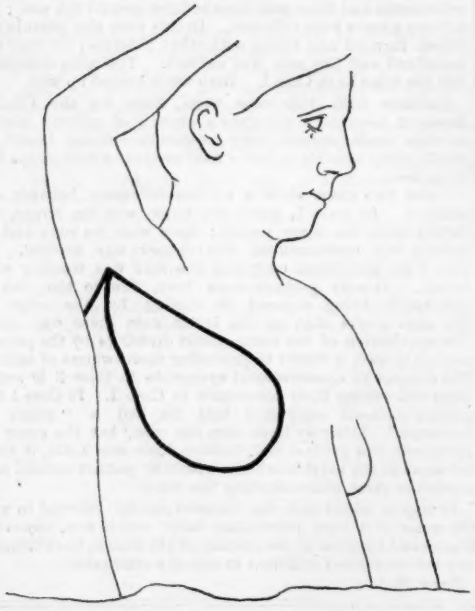
BY DR. FRANCESCO PURPURA,
DIRECTOR OF THE INSTITUTE OF SURGICAL PATHOLOGY OF THE ROYAL UNIVERSITY OF PAVIA.

THE advantages which the Tansini method for the cure of cancer of the breast offers in comparison with other methods are already known. I think it useful, however, to give some new evidence of its excellent results as I consider that his method deserves to become more widely adopted.

The operative procedure for the cure of cancer of the breast has been gradually modified as the study of the channels of diffusion of cancer has advanced. Although we had already succeeded in performing very extensive surgical operations we did not remove a large portion of the skin of the breast region, but were accustomed to approximate the edges of the skin and suture them. But such a procedure often resulted in infection of the skin in the scar or near it or in the scar of the sutures. Infection of the skin of the breast region is brought about, some authors say, by the inoculation of cancer elements made during the operation or by the spread of the disease through the lymphatic vessels into that portion of the skin of the breast which is left after the operation.

Professor Tansini in 1895 devised his method to prevent these relapses in the skin and provide for the healing of the wound by means of a special autoplastic flap. In making this flap Professor Tansini proposed, first, to provide for the speedy covering in of the large wound by the dimensions of the flap; secondly, to use for the flap skin which is

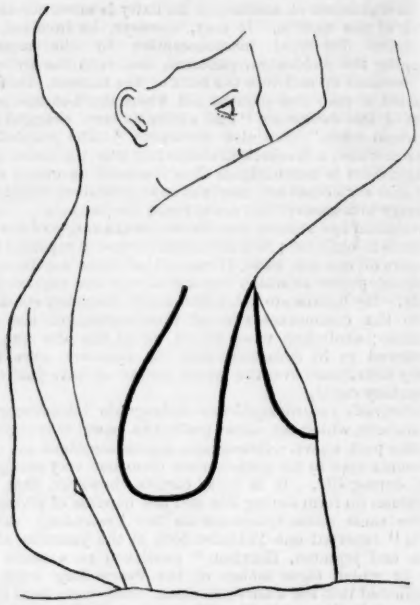
FIG. 1.



very rarely attacked by primary or secondary cancer; and thirdly, to avoid the scar of the lineal incision which is usually made to clear the axilla. As this scar sometimes adheres to the large vascular and nervous trunks it limits the movements of the arm and causes marked compression on the axillary vein.

Tansini therefore proposed to remove *in toto*, without dissecting up flaps, the breast with all the skin which covers it, together with the large and small pectoral muscles, proceeding towards the axilla and taking away all the lymphatic vessels and glands in it. In this way the risks of an inoculation *in loco* are diminished as well as the loss of blood. The incision which is to be of a large oval shape is to reach the extreme point of the axilla, so that the narrowest end of the incision is to correspond to that point. (See Fig. 1.) In this way, when the flap is taken, its large pedicle completely makes up for the loss of the skin of the axilla, while the lines of the scars come to correspond with the anterior and posterior borders of the axilla, the central part of which is reconstructed with unscarred continuous skin. The flap

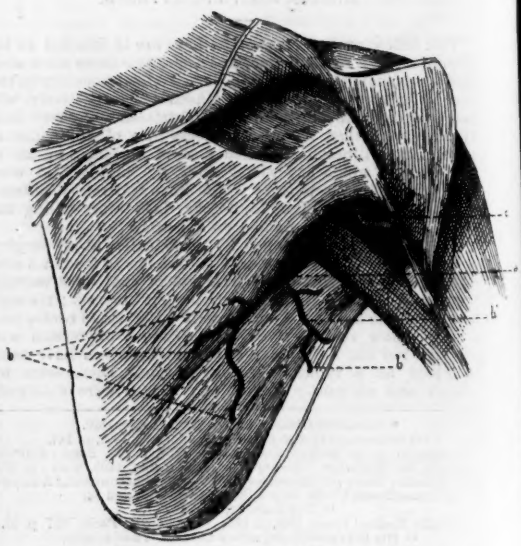
FIG. 2.



which is cut from the back (see Fig. 2) is easily brought forwards on to the pectoral incision and it perfectly covers the loss of skin. The posterior wound from which the flap is lifted is lineally sutured; sometimes a little of its lower part remains open.

Tansini's first method was given a fair trial by himself and other surgeons, but it was observed that a portion of

FIG. 3.



Dissection of the scapular region. *a*. Dorsalis scapulæ artery. *b b'*, Branches of supply to flap. *c*, Posterior circumflex artery.

FIG. 4.

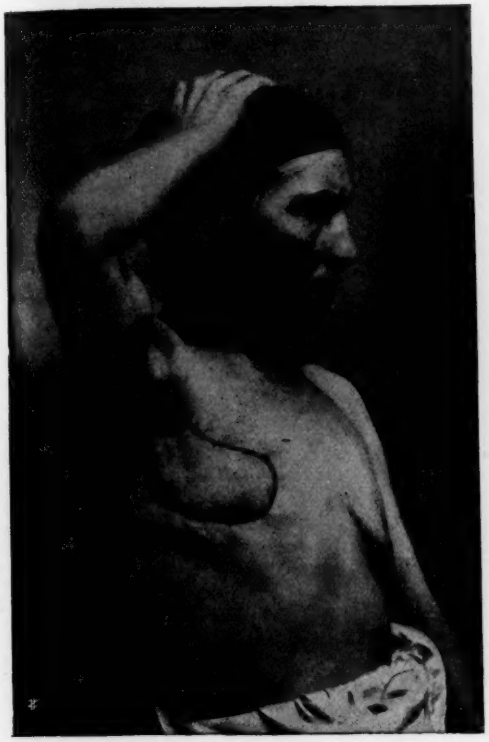


FIG. 5.

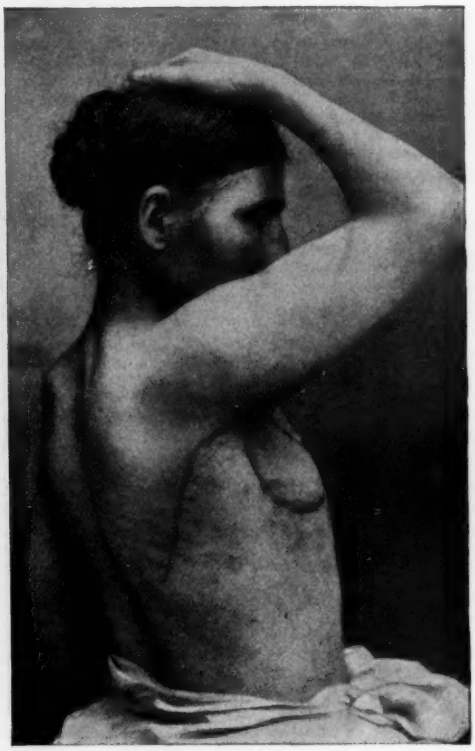


FIG. 6.

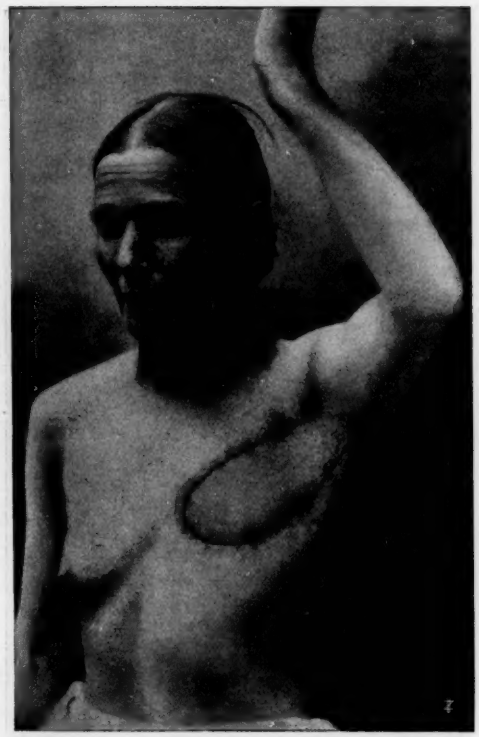


FIG. 7.

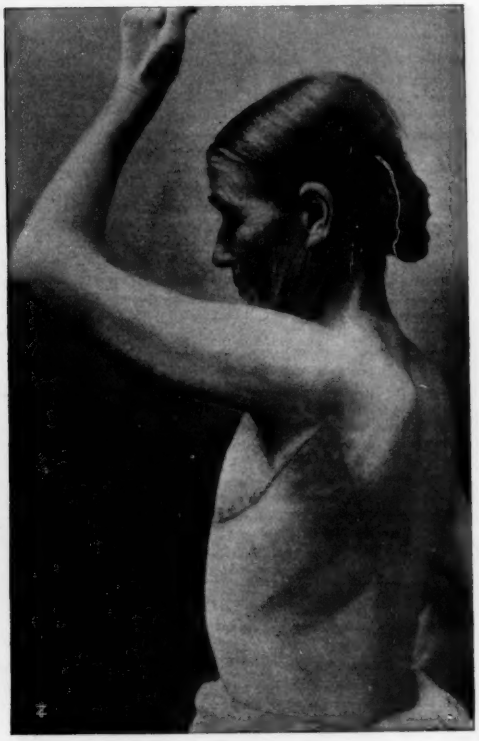


FIG. 8.

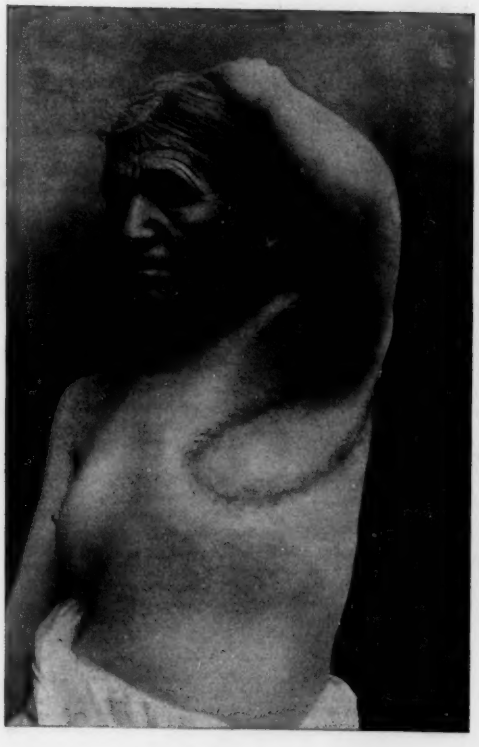


FIG. 9.

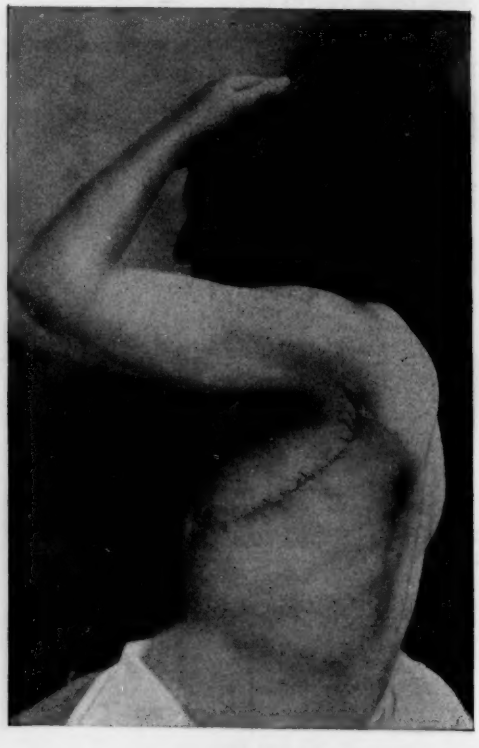


FIG. 10.

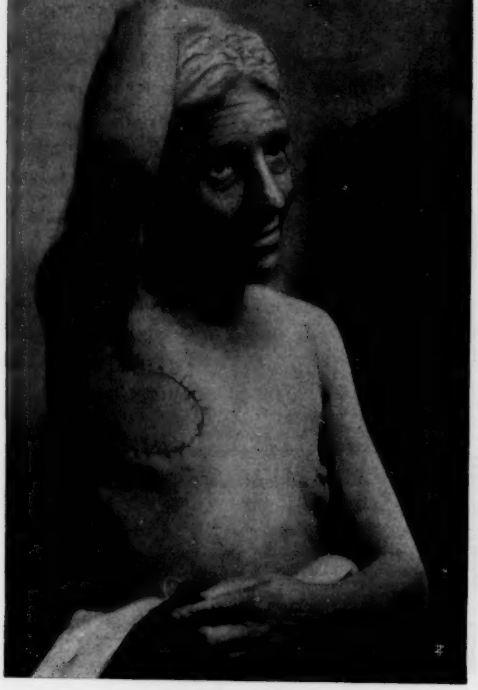
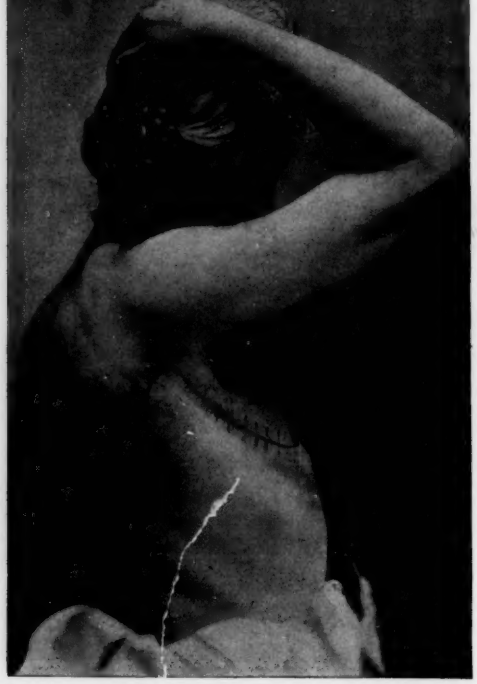


FIG. 11.



the autoplastic flap became necrosed, sometimes over a third of its surface. Such an inconvenience, though it did not injure the value of the operation, greatly diminished its utility, especially because it delayed healing. Professor Tansini found out a way to avoid this inconvenience and published the modifications to be made in his original method. Studying the vessels of supply to the pedicle of the flap he noticed in them some important branches coming from the dorsalis scapulæ[1] (see Fig. 3), which is an important branch of the subscapular artery. The dorsalis scapulæ runs between the teres major and the teres minor and sends branches to the latissimus dorsi and to the skin; the latissimus dorsi, besides the branches of the dorsalis scapulæ, receives some branches straight from the subscapular artery. Tansini therefore proposed to include in the flap the latissimus dorsi and in order to insure a rich blood-supply for the flap he proposed also to include a portion of the teres major. In this way the flap becomes perfectly vital and compensates with the teres major for the loss of the pectoralis major muscle, while at the same time the loss of substance of the latissimus dorsi makes it much easier to join the edges of the back wound.

Tansini's directions for making the flap are as follows: "The pedicle is to be about two inches and a half or two inches and three-quarters wide and in order to include in it the most important arterial branches its centre is to correspond to a point which must be at one inch and a quarter from the posterior axillary line and two inches from the spine of the scapula, and four inches from the inferior angle of the scapula. The flap is of a long oval shape and of dimensions proportional to the wound which is to be covered and is to be directed from above down and rather obliquely towards the median line of the back. The anterior edge of the pedicle is to start from the extremity of the axillary wound and afterwards when the flap is brought forwards it joins the anterior edge of the wound itself; the posterior edge, which is cut into the skin of the back at about two and a quarter inches from the anterior edge so as to include the emerging point of the arterial branches above mentioned, is to join the posterior edge of the axillary wound."

Professor Tansini applied this modified method to many patients and obtained excellent results, so that both he and other surgeons have continued to adopt this method with great success. An accurate study of the different procedures for the cure of cancer of the breast has been published this year by Dr. Marzagalia, and clearly shows the excellence of Tansini's method; it also gives photographic illustrations of the first two cases on which he performed the modified operation. I have myself seen in the operative surgery clinic of the Royal University of Pavia the excellent results obtained by the new method and I give here the figures of two patients operated on by Professor Tansini. From these figures the practical value of the operation may be easily seen.

To sum up, Tansini's method consists first in removing all the skin of the breast, compensating the loss of substance by the provision of a perfectly nourished flap which makes it possible to approximate the skin edges in the region whence it is taken by a lineal suture; the flap is formed from skin rarely invaded by cancer and with its large pedicle abundantly covers the loss of skin of the axilla. The flap allows the arms to move freely. These points are made clear in the accompanying illustrations which represent actual cases on whom the operation has been done. (See Figs. 4 and 5, 6 and 7, 8 and 9, and 10 and 11.)

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Pavia.

[1] Professor Purpura alludes to the dorsalis scapulæ as the circumflexa scapulæ. We have thought it better to adopt the English nomenclature to avoid the risk of confusion with the posterior circumflex branch of the axillary artery.—ED. L.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

PATHOLOGICAL SECTION.

Acidosis in Pregnancy.

A MEETING of this section was held on Feb. 18th, Mr. S. G. SHATTOCK, the President, being in the chair.

Mr. J. B. LEATHES read a paper on the subject of Acidosis in Pregnancy which had come into prominence recently in papers by Zweifel,[1] Williams,[2] and Ewing and Wolf.[3] In 18 successive cases of eclampsia Zweifel found that there was a smaller proportion of the nitrogen in the urine excreted in the form of urea than was normal; the percentage of the total nitrogen excretion that was accounted for by urea varied in different cases from 27 to 70 per cent.; the ammonia nitrogen was, on the other hand, always high, and in one case amounted to 16·5 per cent. of the total nitrogen. To account for the high ammonia coefficient Zweifel found the urine frequently contained lactic acid. Larger amounts of lactic acid were generally found in the blood and more in the placental and fœtal blood than in the maternal. On those and other grounds the lactic acid was regarded by him as the cause of the eclampsia. It had been rightly pointed out that lactic acid might be present in the blood in far larger amounts than those found by Zweifel and cause no inconvenience or symptoms of any kind,[4] and that after epileptic seizures, though not in the intervals between them, far larger amounts were found in the urine which were fairly clearly the result of the convulsions and not the cause.[5] The muscles, it was known, produced and contained lactic acid when the supply of oxygen was deficient.[6] But the high ammonia coefficients given by Zweifel's patients, and considerably higher ones still, had been found by others in disorders of pregnancy. Williams described cases of toxæmic vomiting in the early months of pregnancy in which the ammonia in the urine accounted for 32, 35, and 45 per cent. of the total nitrogen excreted, and in one clinically identical case the liver showed central necrosis of the lobules similar to that found in acute yellow atrophy. Those cases had no jaundice, no albuminuria or other signs of renal disease and in two of them the liver dulness was normal, while in the third it was somewhat diminished. Such cases as those, and besides the three described fully three others were referred to, Williams regarded as allied to yellow atrophy. The high ammonia coefficient was characteristic. It was not found in cases of neurotic or reflex hyperemesis, nor in the pre-eclamptic toxæmia accompanied by albuminuria, and therefore was an important diagnostic sign of a dangerous condition. A coefficient of 10 or 15 per cent. he says would seem "to justify the diagnosis of toxæmic vomiting and to afford an urgent indication for the prompt termination of the pregnancy." Ewing and Wolf gave a most valuable series of analyses of the urine in more than 30 cases of pregnancy. The first six cases showed no symptoms of abnormality except that in the urine of four of them the ammonia coefficient was somewhat raised, in one case up to 11 per cent., and the urea was low; and in all six the "undetermined" nitrogen (urea, NH_3, uric acid, and kreatinine were determined as well as the total N) gave high figures, 14 and 15 per cent. even when the NH_3 was not above the normal, and 24 per cent. in one case when the NH_3 coefficient was 11 per cent. The normal "undetermined" N coefficient was according to Folin's estimations not more than about 6 per cent. The next six cases, characterised by very severe vomiting beginning early in pregnancy, were grouped together by Ewing and Wolf as toxæmia. In four of these the

[1] Zweifel: Archiv für Gynäkologie, Band lxxii., p. 1, and Band lxxvi., p. 536.

[2] Williams: Johns Hopkins Hospital Bulletin. 1906, p. 71.

[3] Ewing and Wolf: American Journal of Obstetrics, vol. lv., No. 3.

[4] Donath: Berliner Klinische Wochenschrift. 1907 p. 241.

[5] Mouze and Saiki: Zeitschrift für Physiologische Chemie, Band xxxvii., p. 203.

[6] Hopkins and Pletcher: Journal of Physiology, vol. xxxv., p. 247.

urine was found to contain large amounts of ammonia, forming from 20 to 43 per cent. of the total nitrogen excreted in one case. In the other two the ammonia coefficient was normal but in all six the undetermined nitrogen was at least doubled. Similarly, in the other three groups of cases of pre-eclamptic toxæmia, eclampsia, and acute yellow atrophy, low urea and high ammonia coefficients were the rule and large amounts of undetermined nitrogen were common. The authors were disposed to regard the alteration in the proportion of the nitrogenous constituents of the urine which was common to all those conditions as a sign that they were all results of the same underlying disturbance of the metabolism of the body. The point raised for discussion before the section was whether, with the data as yet available, it was justifiable to conclude that the abnormal composition of the urine was in any way causally connected with the grave conditions referred to. It was pointed out that ammonia coefficients such as those described were common in starvation, in severe vomiting and diarrhœa, with diets from which carbohydrates were excluded, in diabetes, and amongst other conditions in certain diseases of the liver. In those last cases there was some evidence that the association of high ammonia coefficients with hepatic disease was incidental rather than causal, and the same sort of connexion has not yet been proved not to hold in the disorders of pregnancy. More striking than the high ammonia coefficient was the large amount of nitrogen in unknown combinations, for to account for that there were fewer possible known causes. It was particularly noteworthy that in complete starvation, so far as the available data went, there was no evidence for a similar phenomenon. But, on the other hand, there was some difficulty in attributing greater significance to that sign, as all the six cases described by Ewing and Wolf as being free from symptoms of any grave disturbance excreted more than twice the normal amount of nitrogen in such unknown combinations.

OBSTETRICAL AND GYNÆCOLOGICAL SECTION.

Ovarian Dermoid with Secondary Cysts connected with the Omentum.—Exhibition of Specimens.

A MEETING of this section was held on Feb. 13th, Dr. HERBERT R. SPENCER, the President, being in the chair.

Dr. MARTIN RANDALL read a paper on Ovarian Dermoid with Secondary Cysts connected with the Omentum, including a pathological report by Mr. T. W. P. Lawrence. Dr. Randall described the case of a young woman who had a pelvic tumour of the size of a hen's egg situated in the right posterior quarter of the pelvis rather high up. There were symptoms of inflammation and the tumour was opened in the right iliac region and purulent-looking fluid with some vernix-like material escaped. The cavity was drained but subsequently the cyst was removed by operation. The omentum was observed to be studded with a large number of small cysts containing cheesy material and hair and a large piece of this structure was removed. Mr. Lawrence reported that the main tumour was a dermoid of the right ovary. As many as 50 minute cysts were found in the omentum. They were for the most part lined with cubical epithelium and contained sebaceous material. The patient made a good recovery but died a year later with symptoms of apoplexy.

The PRESIDENT thanked Dr. Randall and Mr. Lawrence for their valuable and interesting paper. He thought there was little doubt that the fluid at the first operation was sebaceous and not purulent. He had been surprised to find how frequently some operators met with "suppurating dermoids." The explanation, he thought, was that the sebaceous material, fluid at the temperature of the body, closely resembled pus to the naked eye. In his experience suppuration rarely occurred in dermoids. A practical deduction from this paper was the importance of removing these and other ovarian tumours entire if they were not too large. This had been his practice for many years. He did not go so far as Mr. J. Bland-Sutton, who removed all tumours, however large, entire, sometimes making an incision extending from the ensiform cartilage to the pubes. Such a long incision certainly to some extent increased the risk of omental and intestinal adhesions and of hernia.

Dr. A. L. GALABIN said that he had met with one somewhat similar case in which there had been a further development of the metastases than in any of those collected by Dr. Randall. An unmarried lady, aged between 40 and 50 years, came with a large tumour the history of the duration of which was quite indefinite. She said that her abdomen had been large for as long as she could remember. An ovarian tumour was diagnosed. At the operation it turned out to be a dermoid and was removed with difficulty on account of universal adhesions. Among the adhesions and over the peritoneum were scattered very numerous thin-walled cysts containing sebaceous fluid like that in the main cyst. These existed also in the cellular tissue of the abdominal wall and pelvis so that a number of them were divided in the abdominal incision. No skin-like structure was seen in the secondary cysts. Those on the peritoneum were thin-walled but in the cellular tissue no definite cyst wall could be detected. A good deal of sebaceous matter had to be left unremoved but the incision healed well in the first instance. After some weeks it broke down again and a discharge of oily fluid began which later became semi-purulent. The patient remained ill many months and it was feared that the condition might run a malignant course, but eventually the sinus closed, she recovered completely, and was well after several years. Dr. Galabin agreed with the President that it was desirable if possible to remove a small or medium-sized dermoid cyst entire.

Dr. R. H. HODGSON remarked on the fact that some of the cases alluded to died with septic symptoms. He suggested that they might have been saved had hexamethylene-tetramine been used. He had experimented with it in large and small quantities in many and varied diseases, and had found it most valuable in septic diseases, but it needed to be used with caution. The kidneys afforded the first and most marked signs that the drug was in excess. He strongly suggested its use to those who had much operative work on the peritoneum.

Dr. H. MACNAUGHTON-JONES said that there must have been some thousands of ruptured dermoid cysts and yet only the cases mentioned had been recorded. It did not appear therefore that there was any great danger of metastasis or implantation in the case of simple dermoids.

Dr. AMAND J. M. ROUTH had seen several cases where dermoid cysts of the ovary had ruptured before or during the operation without such sequelæ as had been described. Were Dr. Randall and Mr. Lawrence able to discriminate between dermoids which were innocent and those the cells of which were liable to be transplanted and to develop into proliferating cysts as in the cases recorded by them?

The following specimens were exhibited:—

The PRESIDENT: Caseating Carcinoma of the Corpus Uteri.

Dr. MACNAUGHTON-JONES: Hæmatosalpinx complicating a Myomatous Uterus.

Mr. EARDLEY L. HOLLAND: A Melanotic Tumour of the Vulva.

Dr. AMAND ROUTH: A Placenta Diffusa.

MEDICAL SOCIETY OF LONDON.

Chemical Examination of the Gastric Contents after a Test Meal.—The Experimental Production of Gastric Ulceration by Injection of Gastrotoxin.

A MEETING of this society was held on Feb. 24th, Dr. J. KINGSTON FOWLER, the President, being in the chair.

Dr. W. H. WILLCOX read a paper on the Importance and Significance of the Chemical Examination of the Gastric Contents after a Test Meal. He emphasised the importance and necessity of the thorough and systematic examination of the gastric contents in cases presenting persistent dyspeptic symptoms. It was only by that means that a trustworthy diagnosis could be arrived at in many cases. The lack of information as to the nature of the gastric contents in the different forms of dyspepsia and gastric diseases was deplored, and it was pointed out how necessary it was that cases of that class should be systematically investigated in order that more accurate knowledge might be obtained of the condition of the gastric contents. The importance of the investigation in directing treatment along the right lines was insisted upon. It was pointed out that in every case it was necessary that both the clinical history and symptoms should be fully considered in conjunction with the result of the analysis of the gastric contents. An analysis alone was not sufficient to enable one to form a trustworthy diagnosis. The chemical evidence and the clinical evidence were supplementary to one another. The results of a complete analysis of the gastric contents

were carefully considered. The importance of the estimation of the total acidity was described and it was pointed out how that in pyloric carcinoma sometimes the total acidity was equal to, or slightly above, normal. The value of the presence of free HCl was described. The great importance of the estimation of the active hydrochloric acid was noted. That was the most important estimation in the gastric analysis and was much more trustworthy than the total acidity. It had been stated that the hydrochloric acid was diminished in cancer of the organs when the stomach itself was not involved. There was great doubt if that were true. The only true evidence of diminished hydrochloric acid in those conditions would be given by estimations of the active hydrochloric acid, not by the free hydrochloric acid. Dr. Willcox found in several cases of cancer of organs contiguous to the stomach that the active hydrochloric acid had not been reduced, so that it could not be correct to say that extra-gastric cancer was a cause of diminished HCl in the gastric secretion. The value of the tests for lactic acid, mucin, and sulphocyanides was explained. A new method of estimating the ferment activity of the gastric contents was described. That was regarded as furnishing very valuable information, and of being of almost equal importance to the estimation of the active HCl. The method of estimation was well adapted to clinical work and furnished trustworthy results. It depended on the addition of increasing quantities of gastric contents respectively to a series of test tubes 5 inches by ¾ inch, each containing five cubic centimetres of milk. After mixture the tubes were left in a water bath at 40°C. for 30 minutes. At the end of that time the tubes were examined. Above a certain point in the series all the tubes would have undergone complete clotting so that the contents would not flow out on inversion while below that the contents could be poured out. The minimum quantity of gastric contents to cause complete clotting was a measure of the rennin present. Where the acidity was low the renninogen should be estimated by mixing equal quantities of 0·4 per cent. HCl and gastric contents and carrying out the same method of estimation. In normal cases about 0·2 cubic centimetre of gastric contents was necessary to cause complete clotting. In gastric carcinoma the ferment activity was much reduced. 0·5 cubic centimetre or more of gastric contents was necessary to cause complete clotting. In congenital pyloric stenosis the rennin activity was raised. In marasmus and acid dyspepsia of children the ferment activity was lowered. Lists of recent analyses of the gastric contents in groups of several cases were given for gastric ulcer, gastric carcinoma, gastritis, mucous colitis, gastric ulcer before and after gastro-enterostomy, in carcinoma elsewhere than the stomach, and in children in congenital pyloric stenosis, acid dyspepsia, and marasmus. Conclusions as to the nature of the gastric contents in various pathological conditions were deduced from these analyses.—The paper was discussed by Dr. F. DE HAVILLAND HALL, Dr. F. J. POYNTON, and Dr. J. P. PARKINSON, and Dr. WILLCOX replied.

Dr. CHARLES BOLTON read a paper on the Experimental Production of Gastric Ulceration by Injection of Gastrotoxin. He said that the gastrotoxic serum was prepared by injecting the mucous membrane of the stomach of one animal into another, the blood serum of the injected animal becoming poisonous for the gastric cells of animals similar to that of which the stomach had been used for injection. Three sera were described: (1) that obtained by injecting the rabbit with guinea-pig's gastric cells; (2) that obtained by injecting the rabbit with rabbit's gastric cells; and (3) that obtained by injecting the rabbit or fowl with human gastric cells. The mucous membrane was washed free from blood, made into an emulsion with salt solution, and injected fresh into the peritoneal cavity. After four or five injections the animal was bled and the serum examined *in vivo* and *in vitro*. Over 150 animals had been immunised in this way. The serum obtained by injecting the rabbit with guinea-pig's gastric cells produced no lesion in the rabbit itself nor any lesion in any other rabbit, but when injected into a guinea-pig it produced acute symptoms and death within 24 hours. If smaller doses than lethal ones were injected the acute symptoms all disappeared by the next day. The post-mortem lesions consisted of patches of necrosis in the mucous membrane of the stomach which developed into acute ulcers. The patches of necrosis were stained black by altered blood pigment and were usually multiple but might be single. The necrotic process began at the ducts of the glands and extended towards the bases; it was limited to the mucous membrane. The healing of the ulcers was studied by producing them in the first instance by local injection of the serum into the wall of the stomach. In this way an ulcer could be produced without toxic symptoms. It was found that such ulcers completely healed in from 14 to 21 days leaving more or less thickening of the peritoneum and sometimes a little puckering of the mucous membrane. Adhesions might be formed with various organs or the ulcer might perforate, giving rise to acute peritonitis or local abscess formation. The mode of action of the gastrotoxin was studied by neutralising the gastric juice whilst the poison was acting. This was done by introducing sodium bicarbonate into the stomach, and it was found that when the gastric juice was thus put out of action the gastrotoxin was unable to produce ulceration of the stomach, and no microscopic change could be found in the cells as the result of the action of gastrotoxin. It was thus demonstrated that the necrosis was not due to the action of the gastrotoxin but that the latter produced some change in the cells which allowed the gastric juice to attack them, the process being therefore one of self-digestion. That the poison injured the cells and did not remove any specific resisting power possessed by them was shown by injecting other cytotoxins. Hepatotoxin, enterotoxin, and hæmolysin were shown to produce necrosis of the stomach in exactly the same way by injuring the cells. Certain protoplasmic poisons introduced into the stomach were likewise found to initiate self-digestion. Such poisons were hydrochloric acid above 2 per cent., sulphuric acid above 0·8 per cent., lactic acid above 4 per cent., and acetic acid above 2 per cent. If the animal were poisoned with gastrotoxic serum the introduction of these solutions into the stomach in much greater dilution than was necessary to produce necrosis was found markedly to increase the lesions. Hyperacidity of the gastric juice, therefore, though unable of itself to produce ulceration might increase the tendency to ulceration by acting as a protoplasmic poison. Repeated injection of the gastrotoxic serum was not found to lead to chronic ulceration but to immunity to the serum, the animals becoming protected against a lethal dose. Hyperacidity of the gastric juice, produced by feeding the animals in which ulcers had been induced on 2 per cent. hydrochloric acid, did not retard the healing of the ulcers. Experiments dealing with neutralisation of the gastric juice and motor insufficiency of the stomach were not yet in such an advanced condition as to admit of conclusions being drawn therefrom. Experiments *in vitro* demonstrated the presence of a hæmolytic factor in the serum and also precipitins not only for the protein of stomach cells but also for the proteins of hepatic and intestinal cells and the blood serum of the guinea-pig. The gastrotoxin was proved not to be a specific poison for the stomach cells because it possessed an action upon other tissues; other sera were capable of causing necrosis of the stomach, and various tissues of the body were shown to be able partially to neutralise the effects of the serum if mixed with it for an hour previous to injection. The gastrotoxin formed against human stomach cells was proved to possess the same action *in vitro* as the guinea-pig gastrotoxin. The rabbit was found to respond to the injection of rabbit's stomach cells by the formation of a poison not for rabbit's tissues but for those of the guinea-pig. The lesions produced were identical with those described in the case of the guinea-pig-rabbit gastrotoxin. Evidence was obtained that the rabbit also formed a poison against its own stomach cells, and that this poison was neutralised by a concomitantly formed antibody. Whether any conditions existed which could prevent the formation of this antibody and thereby lead to an auto-intoxication was a question with regard to which no experimental data were forthcoming.

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN.

Acute Intestinal Obstruction.—Exhibition of Cases and Specimens.

A MEETING of this society was held on Feb. 21st, Dr. EDMUND CAUTLEY being in the chair.

Mr. H. S. CLOGG read a paper on a case of Acute Intestinal Obstruction produced by a band, the latter being in part an intestinal diverticulum bearing an accessory pancreas.

A boy, aged 12 years, immediately following a blow on the abdomen developed symptoms of acute intestinal obstruction. When seen about 44 hours after the onset of symptoms he was very ill and evidently suffering from some form of intestinal obstruction. The presence of a tense, rounded, and resonant swelling in the right iliac and hypogastric regions suggested a volvulus as the cause. Operation was performed about 46 hours after the commencement of the illness. About one foot of small intestine was snared under a band, and this loop of gut was also twisted on its mesenteric axis. The intestine appeared gangrenous and was excised. The ends were anastomosed by a Murphy's button. The band and diverticulum were removed. The boy's condition was precarious for several days but he ultimately made an excellent recovery. The interest of the case lay in the nature of the band. It was composed of an intestinal diverticulum some three-quarters of an inch in length with more or less perfectly formed intestinal walls. Attached to the distal extremity was a flattened glandular body three-quarters of an inch in diameter, which showed the structure of the pancreas on microscopical examination. Leading from the extremity of the diverticulum at its junction with the accessory pancreas was a definite rounded cord consisting of fatty and fibrous elements. The diverticulum was regarded as a true congenital one.

Dr. GEORGE CARPENTER showed two specimens of Congenital Morbus Cordis. The first was from a female aged ten weeks. When admitted to hospital she was anæmic, ill-nourished, and ill-developed. Her tongue was large and protruded from her mouth, and she did not close the lips over it. The cartilages of the last four ribs were absent. She was not cyanosed. The area of cardiac dulness was increased to the right, and there was a loud systolic bruit best heard over the pulmonary orifice; it was audible over the back and front of the chest, louder on the left side than the right. Ten days after admission she was convulsed, and some hours afterwards died collapsed. The aorta arose from both ventricles, four-fifths of its lumen being over the left. The pulmonary artery was small and but half the size of the aorta; it had two semilunar valves. The ductus arteriosus was patent and of the size of a small probe. The foramen ovale admitted an ordinary slate pencil. The auricles were of equal size and thickness. The heart was inclined to be bun-shaped, and the left ventricle was twice the thickness of the right. The tongue was examined microscopically but nothing abnormal was seen. The second specimen was from a female aged nine months. When admitted to hospital she was very pale and thin and suffering from pneumonia. She died on the following day. There was a loud systolic murmur best heard over the third left interspace, audible back and front, better on the left side than the right, and also to be heard in the great vessels of the neck. The pulmonary artery was larger than the aorta. It divided right and left into branches for the lungs and ended in a third vessel which practically continued the thoracic aorta. The aorta having given off the usual vessels was constricted at its junction with the ductus arteriosus, being at this point a trifle larger than the innominate artery. Beyond the union the artery was smaller than the branches to the lungs, being three-sixteenths of an inch in diameter. The right and left auricle practically formed one chamber, though its right side was twice as thick as, and larger than, the left. The auricular septum was represented by a translucent membranous partition of semilunar outline, hanging from the roof of the auricle and attached back and front. It measured a trifle more than a quarter of an inch in depth and about five-eighths of an inch from before backwards. Posteriorly it was somewhat fenestrated. The heart was inclined to be rounded on the right side. The left ventricle, although apparently more muscular than the right, did not bear the usual relationship in regard to thickness. The cavity of the left ventricle was smaller than that of the right. Dr. Carpenter said that although the malformations were so dissimilar the physical signs were practically identical. Further, the bruits that were heard were the same as those audible in stenosis and atresia of the pulmonary artery and perforate septum ventriculorum. They well illustrated how deceptive the auscultatory phenomena are as a means of determining the nature of cardiac malformations.

Dr. CAUTLEY showed: (1) A Frontal Meningocele and Spinal Myelo-meningocele from a male child, aged 18 days; and (2) a case of Cerebral Ataxia and Imbecility.

Mr. P. MACLEOD YEARSLEY showed: 1. A case of Angeioma of the Right Auricle and Meatus. The patient, a girl, aged 13 years, had been under observation for three years, and during that time it had increased considerably. The right auricle measured 3 inches by 2 inches, while the left was only $2\frac{3}{8}$ inches by $1\frac{1}{2}$ inches. The growth extended down the meatus nearly to the membranum tympani. 2. A specimen from a fatal case of Labyrinthine Suppuration. 3. A case of Suppuration in the Right Labyrinth which recovered under operation. At the operation a small erosion was found leading into the external semicircular canal. Instead of laying open the external canal by enlarging the erosion into it Mr. Yearsley opened up the lowest part of the labyrinth—viz., the vestibule. This not only promised good drainage but avoided any accidental injury to the facial nerve. He considered that the case demonstrated that it was not always necessary to lay open the whole labyrinth.

Dr. T. R. C. WHIPHAM showed a case of Bronchiectasis and Pulmonary Tuberculosis in a boy, aged 16 years, the former condition having apparently supervened on an attack of pneumonia when the patient was 14 months old.

Dr. J. PORTER PARKINSON showed a girl with Inherited Syphilis causing Infantilism.

Mr. SYDNEY STEPHENSON showed: (1) A case of Incomplete Congenital Ophthalmoplegia Externa; and (2) a case of Persistent Capsulo-pupillary Membrane and Hyaloid Artery, with Atypical Development of the Vitreous.

Dr. KENNETH H. A. KELLIE showed a case of Hæmophilia with Adhesions in the Knee-joint. When three years of age the boy cut his finger and the resultant bleeding was difficult to stop. Since then he had suffered from bruises which appeared without any cause and the right elbow- and knee-joints frequently swelled and became painful. The right knee-joint was in a condition of semi-flexion, with great limitation of movement.

Mr. PHILIP TURNER showed: 1. A case of Enlargement of the Upper Jaw in a boy, aged nine years and ten months. He had had no pain, but the swelling, which had been noticed three months previously, was increasing in size. The palate was slightly depressed on the affected side and the incisive and canine fossæ were obliterated; the swelling extended up to the margin of the orbit. Egg-shell crackling was obtained. Skiagrams showed that the central incisor which was unerupted had a short broad root, with a definite shadow leading upwards from it. The root of the lateral incisor was well formed. In spite of the short history Mr. Turner considered the case to be one of dentigerous cyst. 2. A girl, aged ten years, with Multiple Arthritis. The diagnosis lay between osteo-arthritis and congenital syphilis. He considered the condition was due to osteo-arthritis.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

Pure Animal Wool as a Heat Conserver in Medical and Surgical Work.—The Ophthalmic Reaction of Calmette.—Acquired Diverticula of the Sigmoid Flexure.—Exhibition of Cases and Specimens.

A MEETING of this society was held on Feb. 14th, Dr. J. ALLAN, the President, being in the chair.

Mr. NORMAN PORRITT read a paper on the Use of Pure Animal Wool as a Heat Conserver in Medical and Surgical Work. Mr. Porritt brought forward the advantages of animal wool over that of vegetable origin, such as cotton-wool. The wool was not intended for use as swabs or dressings but as a wrapping for the body where conservation of bodily heat was desired. He advised it as a substitute for the familiar Gamgee jacket and had found it of great value in minimising post-operative shock when patients came to the operating table clad in a suit of the wool.

Mr. SECKER WALKER read Notes from 40 Cases in which the Ophthalmic Reaction of Calmette had been observed. Several controls in patients with no evidence of tubercle were tested and all were negative except one; this may have been a case of latent tubercle not diagnosed. A case of advanced tuberculous peritonitis gave no reaction, while a milder case was positive. A case of severe scleritis with no history of syphilis or rheumatism gave a positive reaction, while two cases of irido-cyclitis of doubtful origin were negative. A case of recent choroiditis with no history

of syphilis gave a negative reaction but improved rapidly under mercury. The possibility of infection or injury to the eye by use of the test was discussed. One eye treated with a positive result developed in a few days a phlyctenular corneal ulcer which healed rapidly in a few days without scar. This was the only case that Mr. Walker had seen, but a similar case had been observed by Dr. A. Webster and Dr. J. Kilpatrick, the only case which he had been able to find reported. In studying the test as regards local disease, such as disease in the eye, it must be remembered that a positive result would not necessarily refer to the disease under examination, but might point to the existence of a tuberculous deposit in another part of the body. Dr. OTTO F. F. GRÜNBAUM stated that he had tried the reaction in several hundreds of cases and that data were being collected at the London Hospital in sufficient number for the statistician attached to that institution to work out mathematically the accuracy of the test. One could well understand that only those cases which were examined post mortem, or those in which the tubercle bacillus was demonstrated, were available for the calculation, and that for this reason considerable time must elapse before the work could be completed. Mr. Walker had stated that the reaction began from three to 24 hours after the instillation of the drop; he thought that although this was true in quite a large percentage of cases, nevertheless there were quite a number in which there was some delay and it was his routine practice to examine 24 hours and 48 hours after introducing the tuberculin. He considered all those cases positive in which any differences had developed in the appearance of the inner canthus or plica which persisted for 24 hours. Not infrequently the introduction of a drop of the fluid would cause a slight hyperæmia for an hour or two, but this would not last for 24 hours. His impression was that the more experience one had with the reaction the greater reliance one would place in it; that in only two or three cases of his was reaction violent, and that in these the discomfort could usually be allayed by minute quantities of cocaine and frequent washing with boric acid lotion. He tended to the opinion that the greater the resistance of the patient the greater the reaction in the eye. He did not venture to make a dogmatic statement to this effect, for his experience was not sufficiently large. He gave a few instances of cases in which the reaction appeared to fail but which proved later to have been correct. In reply to Dr. A. L. Whitehead's question whether any alteration in the opsonic index was observed after the instillation of the tuberculin he stated that experimenters had noted a distinct negative phase, and that some therefore believed the procedure possibly to possess a detrimental effect upon the patient, but in this he personally did not agree.

Dr. W. H. MAXWELL TELLING read a paper on Acquired Diverticula of the Sigmoid Flexure, considered especially in relation to Secondary Pathological Processes and their Clinical Significance. He pointed out that such diverticula were of much more frequent occurrence than was commonly supposed and that they led not infrequently to serious clinical symptoms. Of these the most important were: (1) inflammatory troubles in the left iliac region, simulating appendicitis in many instances; (2) general perforative peritonitis; (3) inflammatory thickening of the sigmoid flexure, leading to stenosis, tumour formation, and the mimicry of carcinoma; and (4) vesico-sigmoid fistulæ. We shall publish this paper in an early issue.

Dr. E. F. TREVELYAN showed: 1. A woman, aged 49 years, who three weeks ago woke up in the night with vomiting and headache and next morning presented a typical reeling gait. There were no other distinct localising signs and the ataxia had since improved. A small cerebellar hæmorrhage was suggested as the cause. 2. A lad, aged 19 years, with a tabo-cerebellar gait, nystagmus, some tremor and increasing defective intelligence, but with exaggerated knee-jerks and ankle clonus. There was no scoliosis or deformity of the foot or any family history. The resemblances of the case to Friedreich's disease were pointed out.

Mr. J. F. DOBSON showed a case of Double Congenital Dislocation of the Hip-joints in plaster after reduction by the Lorenz method.

Dr. WHITEHEAD showed a case of Lymphangioma of the Orbit.

Dr. T. WARDROP GRIFFITH showed a specimen of Aneurysm of the Abdominal Aorta.

Cases and specimens were also shown by Mr. H. COLLINSON, the PRESIDENT, and Mr. MICHAEL A. TEALE.

NORTHUMBERLAND AND DURHAM MEDICAL SOCIETY.—A meeting of this society was held on Feb. 13th. The evening was devoted to the exhibition of Pathological Specimens and the reading of short papers on pathological subjects.—Mr. J. Rutherford Morison showed: 1. Ruptured Jejunal Ulcer occurring nine months after anterior gastro-enterostomy and leading to the death of the patient from peritonitis. 2. Malignant Stricture (adeno-carcinoma) of the Small Intestine with great dilatation and hypertrophy of the bowel above. 3. Sac of a Ventral Hernia which contained the appendix and a small abscess. 4. Malignant Prostate obstructing the left ureter and with enlarged glands along the iliac vessels. 5. Three very large Calculi from a man whose prostate, weighing nine ounces, was removed two years before. He was well for a year and then had a return of frequency of micturition. The stones could be distinctly felt per rectum. 6. A Uterine Myoma showing red degeneration; it lay in the pouch of Douglas and simulated a pelvic abscess. 7. An enormous Lipoma of 40 years' duration removed from the forearm of a woman, aged 60 years. It appeared to spring from the interosseous membrane.—Mr. T. G. Ouston: Specimens showing Tuberculous Disease of the Mastoid, Optic Thalamus, Apex of the Lung, and Spleen, all obtained from one case.—Mr. W. G. Richardson: 1. A Cystic Tumour from the intra-abdominal portion of the umbilical cord removed from a woman, aged 50 years, in the course of an operation for the radical cure of an umbilical hernia. Microscopically it showed typical umbilical cord structure, being filled with Whartonian jelly. 2. A Renal Calculus removed from an abscess cavity in the right iliac fossa which had simulated appendicitis, there being no urinary symptoms. 3. An example of Chorion-Epithelioma.—Mr H. J. Hutchens showed a beautiful series of microscopical preparations of Pathogenic Micro-organisms.—Dr. W. Martin showed a series of skiagrams illustrating the Value of X Rays in Cases of Slight Injury; also some blood-pressure tracings showing the effect which follows the Intravenous Injection of Certain Drugs, principally eucaine and cocaine.—Mr. G. Grey Turner showed the following specimens: 1. The Pyloric End of the Stomach and a portion of the Duodenum removed from a man, aged 51 years, who had been ill for six months. He was very thin and anæmic but made a good recovery and was well four months after operation. 2. Meckel's Diverticulum which had caused an intussusception by becoming inverted into the bowel. The invagination was reduced and the diverticulum removed, the patient, aged 26 years, making a straightforward recovery. 3. Four feet and six inches of the ileum showing Seven Tuberculous Strictures. It was resected from a man, aged 30 years, whose cæcum had been removed for tubercle four years previously. The patient made an uninterrupted recovery. 4. Tuberculosis of the Cæcum and Ascending Colon removed from a girl, aged 18 years, by a two-stage operation. A lateral anastomosis was first made and four weeks later the affected bowel was resected. Uninterrupted recovery ensued. 5 Carcinoma of the Rectum Arising at the Base of a Simple Polypus. The patient was a man, aged 34 years. Two years previously a large adenoma was removed from the rectum; after this he was well until two weeks before admission when he had a recurrence of bleeding. The rectum was then removed, the patient recovering. 6 Old Hydatid Removed from the Left Lobe of the Liver. The patient was a man, aged 39 years, whose attention was directed to the lump after an attack of pain three weeks before operation. There were nodules all over the liver which looked like cancer. The man made a good recovery. 7. An Ovarian Dermoid with Twisted Pedicle removed from a woman, aged 29 years, who was three months pregnant. At the same time a subperitoneal myoma from the fundus and the appendix were removed. Pregnancy was uninterrupted. 8. An Ovarian Cyst and Chronically Inflamed Fallopian Tube, the latter communicating with a sinus in a ventral hernia. Seven years previously an ovarian cyst was removed and the patient was very ill after the operation. This time she made an uninterrupted recovery. 9. An Enormous Kidney full of Calculi and engrafted with Carcinoma removed from a man, aged 58 years. There was no history of renal calculus, but for eight months he had suffered from pain in the back and loss of flesh. The specimen weighed 2 pounds 15 ounces. The patient recovered from the operation. 10. A Kidney with the whole Ureter. The latter contained several calculi and the kidney was dilated and full of pus. The specimen was removed

from a woman, aged 29 years, who made a good recovery.—Dr. R. A. Bolam and Dr. W. E. Hume gave a Lantern Demonstration on Some Forms of Consolidation of the Lung.—Mr. Hutchens read a short paper on the Bacteriology of Meningitis with special reference to the Meningococcus, and Mr. Rutherford Morison one on Bone Sarcomata.

INCORPORATED SOCIETY OF MEDICAL OFFICERS OF HEALTH.—A meeting of this society was held on Feb. 14th, Dr. D. S. Davies being in the chair.—Professor Henry R. Kenwood, in opening a discussion upon Disinfection, said that if less disinfectants were used than was formerly the case the loss in quantity had been compensated for by a gain in quality and the restriction of the use of the agent to the attainment of an object which was attainable. He deplored the fact that so few sanitary authorities asked for any statement as to the germicidal values of the disinfectants which they purchased. At the same time he admitted that hitherto it had been found impossible to devise a medium of absolutely uniform composition which should serve as a universal standard and reproduce in a satisfactory manner all the possible variations of the media in which a particular germ might have to be disinfected. His own experiments, together with those of Klein, Hewlett, Fowler, and Meredith Wynter Blyth, had demonstrated that the carbolic acid coefficient obtained on the naked germ was not only greatly reduced in the presence of even small quantities of fæces, mucus, or milk, but that a disinfectant having a very high coefficient in distilled water might be of far less germicidal value than one with a low coefficient when both were tested in the presence of organic matter. After emphasising the importance of disinfectants being soluble in water or capable of forming with it a fine emulsion, Professor Kenwood discussed the various methods of generating or liberating formic aldehyde. He described a method which had been advocated by Firth and which had been in use in the United States for some time, notably in connexion with the systematic disinfection of the Pullman cars. Potassium permanganate was placed in a metallic dish and there was poured upon it twice its weight of formalin. After a few seconds chemical action took place between the permanganate and about one-fifth of the formic aldehyde in the formalin; this produced enough heat to evaporate the remainder of the formalin. By this method the maximum dosage of the room by formic aldehyde was obtained in far less time than by the use of paraform tablets in a lamp; and, more important still, the atmosphere was so charged with steam that all surfaces were moistened and received a most thorough application of the disinfectant. When advocating a systematic disinfection of schoolrooms the method recommended was a preliminary spraying of floors, seats, desks, &c., followed by sweeping and wiping, then scrubbing, and finally a disinfectant spraying. After considering at some length the advantages and disadvantages of disinfection by fumigating and by spraying, Professor Kenwood expressed the opinion that from the standpoint of efficiency there was little to choose between either method if it was duly recognised that both represented but one step of several which were necessary for the complete disinfection of a room and its contents, and that the most important steps were the washing down with soap and a disinfecting solution of all those surfaces on which dust could settle and the removal of all articles into which germs could penetrate for steam disinfection.—Lieutenant-Colonel R. H. Firth, R.A.M.C., considered that infection passed from man to man and he doubted very much whether it attached itself to surfaces. He gave some very interesting and instructive details of the results which he had obtained in recovering formic aldehyde after evaporation by varying methods. The permanganate method he considered an ideal one, though he obtained excellent results when formaldehyde tablets were dissolved in boiling water and then evaporated over a lamp. He drew attention to the great necessity for taking into consideration during the process of disinfection the temperature and the amount of moisture in the air. He advocated a temperature of 70° F. and a humidity of 70 per cent. He agreed that thorough cleanliness was the truest form of disinfection.—Dr. S. Rideal doubted whether a barrack room which had been occupied by tuberculous soldiers would be sufficiently disinfected by turning into it a fatigue party laden only with scrubbing brushes and a supply of soft soap. He pointed out that the advocates of thorough cleanliness advised cleansing with disinfectants.—Mr. Wolf Defries said that as they stood at present there were many moot points quite unknown, many organisms had not been isolated, and about others there was still much controversy. They were in the position therefore that they must take those precautions which were reasonably known, for scientific data were not sufficiently trustworthy to provide for the contingencies of safety.—Lieutenant-Colonel A. M. Davies, R.A.M.C., spoke of the difficulty of raising the temperature of the air to the required degree and considered that one advantage of fumigation over spraying was the penetrating nature of the former.—Dr. Davies, Dr. W. Butler, Dr. David Sommerville, and Mr. M. Wynter Blyth also took part in the discussion.

ÆSCULAPIAN SOCIETY.—A meeting of this society was held on Feb. 21st, when Dr. W. Langdon Brown, the President, showed the Brain of a child, aged two years, who had died from Meningitis. It appeared very acutely inflamed and there were several small areas of pus scattered over the vertex. There had been vomiting, rigidity of the arms, staring of the eyes, and drowsiness. The right disc was rather swollen but the left was normal. There was no squint, paralysis, or head retraction. The epigastric reflex was lost and Kernig's sign was present. Lumbar puncture yielded a turbid fluid with polymorphous cells and lymphocytes and a diplococcus which proved to be incapable of cultivation.—Dr. Leslie Durno related a case of Cæsarean Section in a woman, aged 50 years, a two-para, who had a conjugate of two and a half inches. The operation was done early while the membranes were intact and before the head had engaged in the brim and the patient made an uninterrupted recovery.—Dr. David Ross read a paper advocating Cremation. The problem of the dead, he said, was, "Shall we help or shall we hinder that from which there can be no escape?" The late Sir Henry Thompson had put it thus: "Given the dead body, how shall we best resolve it into carbonic acid, water, ammonia, and mineral elements, without giving offence or doing injury to the living?" From the sanitary point of view cremation was undoubtedly the best method of disposing of the bodies of the dead, which should not be allowed to taint the air breathed or to befoul the water drunk. They all had seen graves opened and coffins floating in water, a saturated solution of putrefying matter which must percolate and contaminate streams used for household supplies. Again, the poisons from those who die from such infectious diseases as diphtheria, scarlet fever, smallpox, tuberculous disease, enteric fever, cholera, &c., were undoubtedly transmissible through earth burial, while cremation absolutely destroyed all germs. The late Sir Spencer Wells quoted a remarkable and carefully checked case of scarlet fever which lay dormant for 30 years. "In a Yorkshire village part of a closed graveyard was taken into the adjoining rectory garden. The earth was dug up and scarlet fever soon broke out in the rectory nursery, and from thence spread over the village. It proved to be of the same hæmorrhagic type as the scarlet fever which, 30 years before, had destroyed the villagers buried in the precise part of the churchyard which had been taken into the garden and dug up." What was true of anthrax and of scarlet fever was true of yellow fever and of cholera; on which, indeed, investigation had been even more fully carried out. Cremation so far had failed to become general owing to deep-rooted sentiment, yet religious rites were applicable to the burning as well as to the burial of bodies. Cremation was merely the act of anticipating at once in the interests of the living what must surely come to pass after a longer or shorter time of nauseous processes. 33 years ago Sir Henry Thompson introduced cremation in this country, and though the progress had been slow there were 594 cremations in 1905, 732 in 1906, and 705 in 1907. There were 13 crematories at work and the total number of cremations carried out since the establishment of the first crematorium at Woking was 6469. The furnace, which was of the reverberating type, subjected the body to a temperature of over 2000° F., and from it all volatile gases were drawn on through a subsidiary fire so efficient that not even smoke was visible at the top of the chimney shaft. Complete incineration occupied 80 minutes and reduced the body to ashes and gas. The former resembled a coarse white sugar and amounted to 3 per cent. of the total body weight. The remaining 97 per cent. was liberated in the form of invisible gas, largely CO_2, from the top of the chimney. The average cost of cremation, together with a niche in the columbarium and a memorial tablet, was 13 guineas, as compared with 18 guineas for an ordinary funeral.

The most important argument urged against cremation was the destruction of evidence of foul play; but the certification of death required before a body could be cremated was much stricter than that for burial. The medical attendant must certify as to the fact and cause of death and a confirmatory certificate must be given by an independent practitioner. Every cremation authority must appoint a medical referee and a deputy to be approved by the Home Secretary and to him the certificates were submitted, and on his authority only was cremation allowed to take place. If there was any uncertainty a post-mortem examination or an inquest was ordered. It would be seen that under the system of certification required for cremation crime was much less likely to escape detection than under the comparatively loose certification required for burial.

MIDLAND MEDICAL SOCIETY.—A meeting of this society was held on Feb. 12th, Dr. Justin McC. McCarthy, the President, being in the chair.—Mr. A. W. Nuthall showed a case of Lymphadenoma in a boy, aged seven years. Enlargement of the left cervical glands was first noticed when the patient was four years old and he presented himself for treatment two years later with a large mass of glands underlying the left sterno-mastoid muscle and extending from the mastoid process to the clavicle and composed of a number of distinct enlarged glands of varying size, slightly moveable on each other, of a firm, elastic consistence and not adherent to the overlying skin. There were no other enlarged external lymphatic glands. The condition of the scalp, the ear, the naso-pharynx, and the teeth was healthy and indicated no local cause for the lymphadenitis. The boy had had pneumonia at the age of two years but was always healthy and strong. He was the eldest of four children and there was no suggestion of syphilis or tubercle in the parents. In February, 1907, the blood showed 6,250,000 red cells, 6000 white cells, and hæmoglobin 100 per cent. A differential count was not made. The enlarged glands were carefully and thoroughly removed in February, 1907. A local recurrence deeply placed in the submaxillary triangle was excised six months later. The boy now had masses of enlarged glands in the right side of the neck, the left supraclavicular triangle, and the left axilla. There was no evidence of increased size of the spleen, the liver, or the abdominal glands. Further surgical treatment was impossible. On section the glands showed simple hyperplasia; no tubercle bacilli could be discovered and there were no signs of tubercle formation. After an injection of old tuberculin the temperature rose in eight hours to 99·8° F., returning to normal almost immediately. The case appeared to be one of lymphadenoma the progress of which had not been arrested by free removal of the group of glands first involved.—Mr. C. A. Leedham-Green showed two cases of Tuberculous Disease of Joints illustrating the results of treatment by Bier's method combined with inoculation with tuberculin.—Dr. J. G. Emanuel showed a case of Myasthenia Gravis. The patient was a well-developed girl, aged 19 years, who was almost entirely confined to bed. She was unable to turn over unaided or to lift her feet from the bed. Her grips were very feeble; she could not raise her arms to a horizontal level, nor could she stand without assistance. There was well-marked double ptosis with widely dilated pupils and diplopia on looking to the right and left. Mastication was very difficult and could only be effected with short intervals of rest. For some months the swallowing of solids had been impossible. The amount of weakness varied from day to day and was always more marked towards evening. The symptoms came on insidiously two and a half years ago without any traceable cause and had been gradually progressing. The deep reflexes were exaggerated. The contraction of the muscles to faradism was sluggish and of small range and the muscles became rapidly exhausted on repeated stimulation. The knee-jerks, however, were not similarly exhausted.—Dr. J. Jameson Evans exhibited a woman, aged 30 years, who showed Paresis of the External Rectus in the Right Eye and Enopthalmos with Loss of Lateral Movements in the Left Eye. On attempted adduction of the left eye the globe retracted slightly and turned upwards, at the same time causing a protrusion of the lower lid which in the primary position showed a distinct fulness as compared with the right. Vertical movements were normal. On attempted abduction and on looking down the upper lid of each eye retracted. The palpebral aperture became narrower on attempted adduction of the left eye. Vision in the right eye was $\frac{6}{6}$ with correction and in the left eye it was only $\frac{6}{9}$ with correction. The left visual field was contracted 20°–40°. The pupils, the media, and the fundi were normal. The condition was congenital.—Dr. J. Douglas Stanley showed a Heart from a case of Mitral Disease.—Dr. Walter Jordan showed the Brain of a man, aged 41 years, who had had chronic pulmonary tuberculosis and who died after an acute illness of tuberculous meningitis. There were tubercles about the base of the brain in numbers, with much exudation and thickening of the pia mater. The ventricles were greatly distended with fluid; on the fringes of the choroid plexus were a number of large yellow nodules. Professor R. F. C. Leith, who had made a microscopic examination of these, reported that they showed no appearance of tuberculosis. The point was raised as to the frequency with which chronic pulmonary tuberculosis terminates in tuberculous meningitis.

CLINICAL SOCIETY OF MANCHESTER.—A meeting of this society was held on Feb. 18th, Dr. J. J. Cox, Vice-President, being in the chair.—Dr. C. Christopher Heywood read a short paper on Calmette's Tuberculin Ophthalmic Reaction. He stated that in his experience the 0·5 per cent. solution was, for children at any rate, quite strong enough to produce the characteristic reaction, and that even with a solution of this strength the reaction was occasionally too violent. In most of his cases the reaction came on in from six to 12 hours; in one it did not appear until 60 hours after instillation, it was then a perfectly normal reaction of moderate intensity and was well in a week. In one case the conjunctivitis had lasted for six weeks and was now slowly clearing; this was in a child who at the time had no evident signs of tuberculous disease but who had recently developed a chronic pleurisy. In none of Dr. Heywood's cases had there been any effect on the temperature or on the general health. He considered a negative reaction in a case of well-marked tuberculosis indicated that the case was hopeless. He had up to the present seen no case which gave a positive reaction where tuberculous disease was not found post mortem. The reaction repeated at intervals appeared to be of value to determine the healing of old lesions.—Dr. Charles H. Melland read a paper on the Rôle of Suggestion in Treatment. He said: However great may be a physician's other abilities they are all thrown away if he lacks the quality of being able to impress his patients with his sincere wish and ability to do them good. In many cases of illness, especially those that we class under hysteria, hypochondriasis, neurasthenia, or functional neuroses, there is an extreme liability to magnify out of all proportion insignificant disturbances that in a healthy person would pass unnoticed, or to evolve wholly imaginary symptoms; and even when there is real organic disease much additional misery is caused by hypothetical troubles being grafted on to the real. These are mentally induced in the patient by some process of suggestion, in whatever way originating, and in our treatment, as well as the drugs and other remedial agencies that we employ, counter suggestions have to be made use of. These are naturally implied in our expression of confidence of, and in the patient's confidence in, our ability to cure him. The success of the quack mainly depends on the overweening self-confidence with which he proclaims his special gifts and the occasional coincidence of the cure of some functional ailment with the use of his nostrum. The same must be said of other methods of cure which have much in common with quackery—viz., faith-healing in various forms, including "Christian science." That certain diseases may be cured by purely psychical methods every medical man will admit, but the different schools of faith-healing have ignorantly transgressed the limits of the possible, whereas had they confined themselves, guided by medical skill and knowledge, to teaching that imaginary diseases have no real existence they would have done well. The first essential in treatment is careful and accurate diagnosis, especially to determine to what extent the symptoms are due to functional disease; then hopeful prognosis as to the cure of these symptoms; and finally careful details as regards treatment, directed to improve the patient's general sense of well-being and to confirm his confidence that everything is being done to help him. Specific suggestive treatment must aim at occupying his mind and directing his attention in such a way as to avoid morbid introspection and applying repeated assurances of his commencing improvement and ultimate complete recovery. It would appear that hypnotism as applied therapeutically is nothing more than a means of disposing a patient's mind to be unusually receptive towards curative suggestions.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Jan. 31st, Dr. J. Walker Downie, the President, being in the chair.—Dr. A. A. Gray reported a case of Temporo-sphenoidal Abscess which had ruptured into the lateral ventricle. On opening the abscess very fœtid pus mixed with cerebro-spinal fluid escaped. After operation great improvement took place. Consciousness and intelligence were quite restored and the various paralyses which previously had been present disappeared to a great extent. A few days afterwards, however, meningitis set in and the patient died 14 days after operation. Post-mortem examination revealed a long and tortuous sinus passing almost horizontally backwards from the abscess and opening into the lateral ventricle at the point where the posterior joined the middle cornu. The infection thus had reached the right lateral ventricle and had then extended to the third ventricle, from there to the left lateral ventricle, and downwards to the fourth ventricle through the aqueduct of Sylvius. From the fourth ventricle pus had escaped into the arachnoid space and caused a basal meningitis and involved all the cranial nerves. The chief interest in this case lay in the comparatively long time during which the patient lived after the rupture of the abscess into the lateral ventricle. This was probably due to the operation being performed very soon after the rupture and from the rupture being more a gradual leakage into the ventricle rather than a sudden burst.—Dr. A. Freeland Fergus read a paper on the Causes and Treatment of Lacrymation. Hypersecretion of tears was caused by emotion, the presence of a foreign body, injury (as by chemical fumes), and also frequently accompanied inflammatory diseases of the conjunctiva. In the last named it was impossible to determine how far it was due to the action of the lacrymal gland and how far it was merely the increased discharge from the inflamed membrane. Frequently the correction of refraction errors stopped a troublesome lacrymation. The most frequent cause was some obstruction to the elimination of tears by the usual passages. The obstruction was situated at the punctum, in the canaliculus, or in the sac and nasal duct. Rarely the punctum and canaliculus were absent, in which case little could be done and the gland might have to be removed. Gradual dilatation by Nettleship's dilator was sometimes possible in cases of marked stenosis of the punctum and canaliculus; probes could afterwards be passed. The treatment of displacement of the punctum varied with its cause. Pathological changes in the sac or in the nasal duct formed the most important group and were generally caused by a septic or an inflammatory state of the mucous membrane of the sac. There was then a great danger of corneal infection if the epithelium became abraded. In the acute stage sedatives should be applied; later probes of small calibre could be passed down to the nasal duct. The cavity should then be thoroughly irrigated with normal saline solution. Bowman's or the smallest sizes of Snellen's silver probes were safest. Pressure on the sac to empty its contents into the nasal passages was dangerous, as septic matter might be extruded into the tissues and there was always the danger of corneal suppuration. In those cases where systematic probing was not sufficient, or where periodic acute attacks came on, the sac should be excised. This operation generally gave excellent results and lacrymation was no longer troublesome. If, however, it still was troublesome the lacrymal gland could be excised. The following points were emphasised. The canaliculi should never be split up. Probing should be little resorted to. No drug that could be used was bactericidal, so that if drainage and washing were not sufficient, the sac should be destroyed by caustic or extirpation. The primary condition was a septic mucous membrane and not a stricture, hence large probes should never be used.

BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 5th, Mr. H. H. Taylor, the President, being in the chair. The President proposed that the society should send congratulations to Dr. A. Newsholme on his appointment as principal medical officer to the Local Government Board and regrets that he is leaving Brighton. This was carried unanimously.—Mr. R. F. Jowers showed a girl with Extroversion of the Bladder on whom he had successfully operated by transferring the ureters, with a ring of the mucous membrane round their mouths, into the rectum; the girl was now able to retain urine for three hours. He also showed an Intussusception with a Polypus not quite at its end which he had successfully removed from a boy, aged 16 years, who had had no tenesmus and had passed no bloody mucus but had only vomiting, while a horseshoe-shaped tumour could be felt.—Dr. Walter Broadbent showed a case of Aneurysm of the First Part of the Arch of the Aorta in a woman aged 55 years; there were pulsation, dulness, diastolic shock, and loud booming second sound in the second right space, diminished air entry in the upper lobe of the right lung, and tracheal tugging; a history of syphilis could not be obtained.—Dr. C. H. Benham showed sputa stained with Unna's polychrome methylene-blue after the method of Israels de Jong of Paris, by which pneumonia could be diagnosed by the blue-violet colouration of the sero fibrinous exudate and the distinctive staining of the alveolar cells; bronchitis by the pink staining of the mucus and the colour of the bronchial cells.—Mr. T. J. Verrall showed a Tubal Hæmatocele removed from a woman, aged 40 years, who for ten weeks had had constant irregular hæmorrhage from the womb which had commenced after a period delayed a week. Per vaginam nothing could be felt until an anæsthetic was administered when a soft boggy swelling was felt with difficulty high up in the posterior fornix. In the specimen there was no decidual reaction, but chorionic villi were found and a microscopical specimen was shown by Dr. F. G. Bushnell. Mr. Verrall also read notes of a case of Acute Suppression of Urine. A woman, aged 56 years, who had had chyluria six months before and had recovered was admitted to hospital with complete anuria. Per vaginam and per rectum hard masses of malignant disease could be felt and the woman died in six days without uræmic symptoms, no urine at all being obtained. Post mortem the cæcum, both ovaries (especially the left), and both ureters were involved in malignant disease. The ureters appeared to be solid cords of carcinoma.—Dr. L. A. Parry read a paper on the Notification of Births Act, 1907; its Importance as a Factor in the Diminution of the Infantile Death-rate. He showed that while the whole death-rate had declined steadily the infantile was the same as in 1860. This was mainly due to diarrhœa and digestive disorders. This Act was not to be adopted unless the town undertook to provide supervision of the babies. He discussed the objections raised by the medical profession to the compulsory notification without fee, and thought that the benefit to the infants, as proved by the Huddersfield experiment, ought to outweigh the objections.

HARVEIAN SOCIETY.—A meeting of this society was held on Feb. 13th, Mr. D'Arcy Power, the President, being in the chair.—Mr. S. Maynard Smith read a paper on the Diagnosis and Treatment of Abdominal Injuries. The symptoms resulting from these injuries were described in detail and their relative importance in diagnosis was pointed out. The difficulty in distinguishing the general shock following the injury from the collapse associated with the rupture of an important abdominal organ such as the liver or the bowel was fully dealt with. The signs associated with free fluid or gas in the peritoneal cavity were discussed. The symptoms suggestive of a grave abdominal injury such as the general appearance of illness of the patient, the increase in pulse-rate, the presence of vomiting, and distension of the abdomen were described and the importance of noticing the advent of these at the earliest possible moment was insisted upon. The question of operative treatment was carefully considered. The whole paper was illustrated by the records of 124 consecutive cases of abdominal injury which had been under treatment at St. Mary's Hospital and reasons for the views expressed and the treatment advised in different abdominal injuries were in many cases supported by the results of these cases which formed the basis for the paper.—The President, Mr. T. Crisp English, Mr. Lawrence Jones, Dr Aitkin, Mr. Campbell Williams, and Dr. B. H. Spilsbury discussed the paper.—Dr. D. W. Carmalt-Jones read a paper on the Treatment of Bronchial Asthma by Inoculation with a Bacterial Vaccine. A brief review was given of the methods employed in the treatment of disease by the opsonic method; the method of isolation of the organism, of its growth, the preparation of the vaccine, and the estimation of the quantity and frequency of the doses by determination of the opsonic index of the patient after inoculation were fully described. In some cases of bronchial asthma a special organism had been isolated from the sputum and a vaccine prepared from this was used for inoculation of the patients suffering from the disease. 20 severe cases of bronchial asthma were treated

by the special vaccine prepared and definite improvement occurred in 16 of them and a marked improvement in 11. The cases chosen were severe cases which had resisted the usual methods of treatment, and the patients themselves were convinced of the marked freedom from attacks which they had experienced since undergoing the treatment by inoculation. Dr. Carmalt-Jones showed several of the cases which he had been treating.—The paper was discussed by the President and Dr. W. H. Willcox.

PATHOLOGICAL SOCIETY OF MANCHESTER.—A meeting of this society was held on Feb. 12th, Dr. J. J. Cox, the President, being in the chair.—Dr. W. E. Fothergill read a paper on the Pathology of the Commonest Gynæcological Conditions. He thought that writers of text-books had not devoted enough attention to the causation of the common conditions which produced menorrhagia, metrorrhagia, leucorrhœa, and pain. In the early half of the last century most of these conditions were ascribed to uterine displacements. At the present time the majority were explained as due to infection and a few as due to displacement, while the remainder were not explained at all. He considered that the majority of minor gynæcological conditions were due neither to displacements nor to infection but to a number of causes which still demanded careful investigation. Amongst these were: (1) Variations from the normal life history of the uterus occurring either at puberty or at the menopause; (2) abnormalities in the process of ovulation; (3) abnormalities in the evolution of the pelvic organs during pregnancy and in their involution after parturition; and (4) tissue changes secondary to anæmia, cardiac failure, arterio-sclerosis, and many other diseases.—Dr. A. Donald gave a communication on Cancer of the Body of the Uterus, with Specimens. His remarks were based on 12 cases which had been under his care. In all the specimens the disease proved to be adeno-carcinoma more or less advanced and in many of the specimens the transition was well shown from hypertrophy of glandular structures to solid masses of epithelial cells. In every case the disease occurred after the climacteric and the only constant symptom was hæmorrhage. Some remarks were made on the differential diagnosis between cancer of the body of the uterus, mucous polypus, fibroid tumour giving rise to hæmorrhage in elderly women, and senile endometritis.—Professor J. Lorrain Smith showed specimens of so-called "Hæmolymph Glands" with microscopic sections. The glands occurred in a case of exophthalmic goitre. Microscopically they showed the structure of ordinary lymphatic glands, the lymphatics and the lymph sinuses being full of blood. The endothelial cells showed marked phagocytic properties towards the red corpuscles.—Dr. W. Mair showed two specimens with microscopic sections of Gas-containing Cystic Tumours, one from the small intestine and the other from the omentum. Both tumours were removed during life by operation. They resembled in structure the air bladder of fishes and were to be regarded as true neoplasms which secreted gases from the blood.—Other specimens were shown as card specimens.

SOUTH-WEST LONDON MEDICAL SOCIETY.—A meeting of this society was held at Bolingbroke Hospital on Feb. 12th, Dr. A. Dumville Roe, the President, being in the chair.—Dr. H. Lewis Jones read a paper on Some Practical Applications of Electricity and X Rays. Dealing first with its uses for diagnostic purposes he showed how the electrical reactions of the muscles could be utilised to demonstrate the exact situation of a lesion in the peripheral nerves or in the spinal cord, giving examples of correct results obtained in cases with multiple external injuries and with no external lesion. He mentioned that by electrical testing the fact that death has occurred could be definitely determined. If no one were buried till the electrical reactions of the muscles had disappeared the fears of being buried alive could be allayed. Passing to its uses in treatment, he spoke of the cautery and of electrolysis in nævus, moles, warts, superfluous hair, and other conditions. Used formerly only for the destruction of tissue, electrolysis was now also applied to the introduction of drugs into the skin. The electrically charged molecules of any given salt in solution migrated into and through the skin in accordance with fixed laws, acids moving towards the positive pole, metals and alkaloids towards the negative, the exact quantity of each being determined by the calculation from its electro-chemical equivalent and the strength of the current employed. Thus about three milligrammes of zinc could be administered in ten minutes under a current of 12 milliampères. Dr. Lewis Jones recorded several very interesting cases of the successful use of various drugs in different morbid conditions, such as lupus and diphtherial infection of wounds. Quinine had thus been given in neuralgia and salicylic acid in rheumatism. Excellent skiagraphs were then shown demonstrating the presence of unusual and sometimes unsuspected morbid conditions, including cases of difficult diagnosis, such as paralysis due to pressure of a cervical rib, vertebral caries, fractured scaphoid, calcification of the lateral ligaments of the spinal column, aneurysms, and tuberculous disease of the lungs. The therapeutic uses of the x rays were briefly referred to, with special reference to ringworm.—In the discussion which followed the President, Mr. J. Gay, Mr. M. Robinson, and Mr. C. A. Sampson took part.

Reviews and Notices of Books.

Obstetrics: a Textbook for the Use of Students and Practitioners. By J. WHITRIDGE WILLIAMS, Professor of Obstetrics, Johns Hopkins University; Obstetrician-in-Chief to Johns Hopkins Hospital, &c. Second enlarged and revised edition. London: Sydney Appleton. 1908. Med. 8vo, pp. 978. 16 plates and 666 illustrations in the text. Price 25*s*.

ONE of the most interesting and suggestive of all modern text-books on midwifery is this work of Professor Whitridge Williams. We therefore welcome the appearance of a second edition and have read it with much interest. The book retains its characteristic features and is especially suited to the consultant and to the practitioner who desires to study a work written by a teaching obstetric physician in which he will find the scientific facts of this branch of medicine clearly and fully stated.

In this second edition of the work the section on the Development of the Ovum has been rewritten. In its present state it forms a most fascinating account of the development of those structures which are especially concerned with the formation of the fœtal membranes and placenta. The difficult subject of the origin of the amnion in the human ovum is clearly discussed and the interesting problems concerned with the maturation of the early ovum are pointed out. New sections have also been added on the Metabolism of Normal Pregnancy, Vaginal Cæsarean Section, Pubiotomy, and Contractions of the Pelvic Outlet. One of the most intricate problems in medicine at the present day is undoubtedly that concerned with the body metabolism, both in health and disease, and although the amount of experimental and other work which has been done is enormous yet our exact knowledge of the very intricate chemical processes involved is in reality of the scantiest description. In only too many instances investigators appear to us to have begun their observations on an entirely wrong basis, since they have endeavoured to study the metabolism of various diseased states before the normal processes of metabolism occurring in the healthy body have been determined completely. This point is well illustrated in the present work. For example, while some two and a half pages are taken up with a consideration of the facts known as to the normal metabolism of the pregnant woman, a whole chapter is devoted to the toxæmias of pregnancy, many pages of which are devoted to the discussion of various theories as to the nature of the different disorders of metabolism which are supposed to be the essential cause of such a toxæmic condition.

The author himself furnishes an interesting example of this kind. His view that an important factor in the diagnosis of the condition known as pernicious vomiting of pregnancy is furnished by a chemical analysis and the determination of the ammonia coefficient of the urine is well known by this time to most obstetricians. While insisting upon the

importance of this view Professor Whitridge Williams omits to mention that a precisely similar condition occurs in any case of starvation, whether voluntary or involuntary, and that the highest ammonia coefficient of all is to be found in some of these cases, amounting in one instance to as much as 66 per cent. of the total nitrogen eliminated. Further than this, the rise in the ammonia coefficient is by no means constant in these so-called toxic cases, as Ewing and Stoné have shown, and the condition of pernicious vomiting of pregnancy is in reality very closely allied to, if it is not actually one of, very acute starvation. Here, therefore, the insertion of a statement of this kind without any reference to the possible occurrence of precisely similar conditions in the absence of any toxic condition whatever would lead the reader to an entirely erroneous conclusion as to the value of the observation. Indeed, it seems exceedingly likely that as our knowledge of the normal metabolism of pregnancy increases the contention put forward by the author that the determination of the ammonia coefficient of the urine is of importance in the differential diagnosis between the reflex and the pernicious vomiting of pregnancy may be found to be entirely erroneous.

The book is an interesting one; in many places, it is true, it betrays its American origin and it exhibits what we are now accustomed to look for in works of this kind—namely, a very imperfect knowledge of the writings of English obstetricians, whether recent or old, and the attaching of an undue importance to any observation or theory which has been made by a German observer, no matter who he may be, or how much or how little reliance can be placed upon his work. The author has, however, written a most excellent text-book. This second edition is even better than the first, and the extremely favourable reception which the book has met with in this country is not more than its due.

The Evolution of Life. By H. CHARLTON BASTIAN, M.A. M.D. Lond., F.R.S., Emeritus Professor of the Principles and Practice of Medicine and of Clinical Medicine in University College, London; Consulting Physician to University College Hospital and to the National Hospital for the Paralysed and Epileptic. With diagrams and many microphotographs. London: Methuen and Co. 1907. Pp. 319. Price 7*s.* 6*d.* net.

FROM time to time some of our most cherished generalisations are assailed and proved to be wholly or partly erroneous in the light of new facts, while, on the other hand, others appear only to gain in stability with advancing knowledge. Since the pronouncement by Francesco Redi of the celebrated generalisation *omne vivum ex vivo*, the biogenetic origin of living organisms has been frequently attacked by biologists of repute, but after many experiments and much controversy has always seemed to emerge triumphant, and after the many critical experiments of Tyndall and Pasteur it appeared to be established incontrovertibly. That the original inception of life on this planet must have occurred by the conversion of non-living materials into living organisms is obvious, if we dismiss as fantastic the suggestion that it may have arrived on some meteoric projectile. Admitting this, there is no philosophical reason for denying the possibility of a similar transmutation at the present time. However, the only possible criterion of its occurrence must be experimental demonstration which has not hitherto been achieved.

Dr. Bastian has always been a consistent protagonist of the doctrine of the *de novo* origin of living organisms from non-living materials, or archebiosis, to adopt the term preferred by him to the older expressions of spontaneous generation and abiogenesis. So long ago as 1872 he published a book entitled "The Beginnings of Life," in which he upheld the doctrines of archebiosis and of heterogenesis, supporting his observations by experiments. His conclusions, and indeed the evidence upon which they were founded, were vigorously attacked and for many years the controversy raged with more or less intensity and sometimes with considerable heat. Dr. Bastian's differences with Professor Tyndall in this country and with M. Pasteur in France are set forth at some length in the book before us, and the experiments upon which he based his contention of the occurrence of archebiosis are described in detail. The earlier experiments fall into two main divisions—first, the determination of the thermal death points of living organisms, more especially of bacteria and moulds; and, secondly, experiments with various fluids suitably prepared so as to be presumably free from living organisms or their germs, with a view to determine whether they can give rise to fresh living organisms *de novo*. The determination of thermal death points is obviously one of supreme importance in regard to such experiments, since it is an essential condition that the fluids and materials employed must be free from living organisms and their spores. Dr. Bastian stoutly declaims against the objection raised by his opponents that if his experiments succeed after the precautions employed by him to insure sterilisation of his media and his apparatus, such sterilisation was inefficient, and also against the criticism of Professor Tyndall that "an interpretation which violates all antecedent knowledge is undeserving of the name."

As a type of the experiment upon which Dr. Bastian bases his views we may describe one carried out with urine. A small quantity of fresh urine is received into a retort, into the neck of which is placed a specially devised sealed tube containing a solution of caustic potash not quite sufficient in quantity to neutralise the amount of urine contained in the retort. The neck of the retort is heated and drawn out to a narrow end, the urine is then boiled for about two minutes over a flame, after which the narrow end is hermetically sealed. The retort is placed in a can of boiling water after an interval of three-quarters of a minute and there allowed to stay for eight minutes. After cooling the potash solution is allowed to mix with the urine, the tube in which it is contained being so constructed that it is easily broken by shaking the retort, which is then placed in an incubator at a temperature of 122° F., with the result that in from 18 to 36 hours the fluid contained within it becomes turbid and swarms with organisms. A control specimen of urine treated in a similar manner but without the addition of potash remains clear and unaltered. Dr. Bastian therefore regards the potash solution as a fertilising agent and the urine as a germinating medium. Numerous variations of this experiment are described and also the results of using various vegetable infusions and milk. Some recent experiments with saline solutions are also set forth. One of these solutions contained sodium silicate, ammonium phosphate, and dilute phosphoric acid. Another contained sodium silicate and liquor ferri pernitratis. After heating such solutions in sealed vessels to various temperatures under 130° C. for ten minutes and then keeping them exposed to light at ordinary temperatures various organisms appear after some days but none have been obtained if the tubes have been heated to temperatures above this. It is obvious that the whole question revolves round the question of sterilisation. Dr. Bastian affirms that his procedures are completely effective in this respect and explains the failure of other observers to obtain evidence of archebiosis by the effects of their measures upon the chemical or physical constitution of the media employed by them. He writes: "Bacteriologists, as a result of repeated processes of heating at brief intervals and often at high temperatures for the special purpose of bringing about complete sterilisation not only kill all pre-existing micro-organisms but, as I maintain, destroy also any potential germinality of the media themselves." Dr. Bastian develops his views as to the origin of organisms and applies them to the problems of

the bacteriology of disease. He maintains that contagious and infectious diseases may originate *de novo* and that various common bacilli may become transformed into pathogenic varieties.

It is difficult not to express admiration for the earnestness of Dr. Bastian's work and for the ingenuity of his experiments but we cannot but feel that the Scotch verdict of "not proven" best expresses the result of his work. At the same time we must recognise that the question of archebiosis is not as finally disposed of as Pasteur and many of his successors believed to be the case.

Life Insurance and General Practice. By E. M. BROCKBANK, M.D.Vict., F.R.C.P. Lond., Honorary Assistant Physician, Royal Infirmary, Manchester. London: Henry Frowde and Hodder and Stoughton, 1908. Pp. 288. Price 7*s.* 6*d.*

THIS volume forms one of the series known as the "Oxford Medical Publications." Medical examination for life insurance is undertaken by a large number of practitioners but the principles upon which policies are issued are thoroughly understood by few. The object of this work is to draw attention to many points in the examination which Dr. Brockbank, after a considerable experience, has found of importance in his own practice. It does not, however, explain at length the many problems which arise when impaired lives have to be assessed. Nevertheless, it will be found of value to those practitioners who have not made many examinations for purposes of life insurance but who naturally wish to ascertain upon what points stress should be laid in filling up their reports to send to the head office of the company for which they are acting. A brief description is given of the commoner types of insurance policies but there is no information as regards how penalties should be added in the case of impaired lives in the various forms of insurance; for instance, no explanation is afforded of the additions that should be made in whole-life or endowment policies respectively. As Dr. Brockbank points out, however, the chief matter for an examiner to understand is that his report should be so complete and full that the experts at the head office can see the applicant through his eyes and so form a correct idea, from their special knowledge and experience of similar cases, as to the value of the life for assurance.

In the chapter headed "Medical Examination" some useful hints are given as to the manner in which the examination should be conducted. Two points are rightly laid stress upon—namely, that the applicant should strip to the waist, otherwise errors may easily arise, and, secondly, that urine should always be passed at the time of the examination and should not be accepted by post or parcel. We also recommend to examiners Dr. Brockbank's remarks on the importance of never disclosing the nature of the report to the proposer. Much inconvenience and unpleasantness may be saved thereby. The observations on the general inspection of the proposer are also worthy of study, especially those on the facial appearance of the applicant; much information can be deduced therefrom. The appearance of the skin together with the expression may give hints which may prove of great use when deciding as to the nature of the policy which is to be issued or to be offered.

The chapter discussing the height and weight in relation to insurance is instructive. Some interesting statistics are quoted which indicate the dangers of over-weight. The high percentage of deaths from diabetes amongst those proposers who were more than 20 per cent. above the normal weight for age and height is worthy of notice. Syphilis in relation to life insurance is discussed at length and we agree with Dr. Brockbank in his conclusion that syphilitic infection is a distinct prejudice to a proposer for insurance and that all syphilitics should be only accepted with some addition to the premium. We should suggest, however, that a difference should be drawn between whole-life policies and endowment policies maturing at 45 years of age. In the latter case a much smaller addition would be necessary.

Dr. Brockbank is of opinion that the statistics given by certain insurance offices in favour of total abstainers are "very convincing." We cannot entirely agree with him. The plan of dividing all proposers into only two classes—total abstainers on the one hand and all the other proposers on the other—is, we think, fallacious. Those individuals who only take a small quantity of alcohol with meals would, we believe, be equally as good lives as total abstainers, but for the sake of the statistics we have just referred to strictly moderate consumers of alcohol are classed with those who drink to excess. Dr. Brockbank speaks in decided tones in reference to glycosuria in relation to life insurance. We consider he is right in declaring that any case even of slight and occasional glycosuria is most undesirable for insurance purposes.

After a careful perusal of this volume we can recommend it to our readers as a useful guide in the medical examination for life insurance in general practice. Instruction in this subject is greatly neglected at the medical schools, so that some work of reference is necessary for practitioners who have to deal with this interesting branch of medical work.

Internationale Übersicht über Gewerbehygiene nach den Berichten der Gewerbe-Inspektionen der Kulturländer. (International Review of Industrial Hygiene, based on the Reports of Trade Inspections in Civilised Countries.) Edited by Dr. E. J. NEISSER. Berlin: Gutenberg Verlag. 1907.

IN this book an attempt has been made for the first time to present an international review of the actual hygienic conditions in factories and workshops so far as these are disclosed by the reports of the inspectors and others having the task of administering the laws upon this subject. The *Bulletin* of the International Labour Bureau, an English edition of which is now issued, gives, as is known, a yearly review of all labour legislation, including the administrative orders and regulations made in connexion with this, and the book "Gesundheitsgefährliche Industrien," edited by Professor Bauer and published under the auspices of the International Association for the Legal Protection of Labour, brings together much material of the same kind. But the practical results attained by this legislation and by the orders and regulations referred to, the actual present hygienic conditions in factories and other work-places, the prevalence of industrial diseases and the technical and hygienic appliances and measures introduced for the prevention of these—such things can be learned only from the reports of the inspectors who come into daily contact with the workman at the work-place and during his work. These reports for the principal European countries have been diligenly gone through by the learned editor who is already favourably known in Germany by his contributions to economic and hygienic science, and the facts recorded are reproduced and systematically arranged in this book.

The varying amounts of material placed at the editor's disposal by the reports from the different countries are quite noteworthy and would seem to result from the greater thoroughness with which the inspection is carried out in some lands, or from the greater care taken to record the results of the inspection and to note the introduction of improved methods and appliances where this has been the case. In these respects the reports from the United Kingdom as embodied in the report of the chief inspector of factories and workshops offer a good example. Here, too, we see the benefit of a special medical inspector of factories

in addition to the usual technical inspectors, a point about which there is still considerable discussion in Germany where there are no special medical factory inspectors. The reports compiled are mostly those for the year 1905, and for the most part the actual words of the inspectors are given as translated into German. The contents are divided under the general heads of Industrial Diseases, Sanitary Conditions, and Institutions for the Welfare of Workmen. At the end there is an elaborate index of the matters contained in the book arranged according to subjects as well as alphabetically.

The usefulness of the book lies in the convenient and systematically arranged form into which is brought a vast amount of information relating to industrial conditions in factories and workshops so far as they affect the health and comfort of the workers, and in the ease with which a comparison in this respect can be made between the various countries the reports of which have been summarised.

Preventable Blindness. By N. BISHOP HARMAN, M.A., M.B Cantab., F.R.C.S. Eng., Ophthalmic Surgeon to the Belgrave Hospital for Children, &c. London: Baillière, Tindall, and Cox. 1907. Pp. 109. Price 2*s.* 6*d.* net.

THE title of this book is somewhat misleading, for it is "an account of the disease known as the ophthalmia of the new-born and of its effects, with a plea for its suppression." The essay commences with a brief historical introduction, followed by a review of the causes of blindness. Information derived from the census returns and from statistics of the schools for the blind under the control of the London County Council tends to show that nearly one-third of the blindness found amongst school children is due to ophthalmia neonatorum. Succeeding chapters deal with the incidence of the disease, its clinical characters, the risks of permanent injury, its contagiousness, bacteriology, and treatment. Mr. Harman brings forward new statistics founded upon his own observations in the London County Council schools, the Middlesex Hospital, and the Royal London Ophthalmic Hospital. For the most part they serve only to emphasise facts already familiar. The most important section is that devoted to the prevention of the disease. The author is not very enthusiastic about Credé's method of prophylaxis, which for our part we consider fully to have justified itself. We think that, in the face of Groenouw's and other investigations, too much stress is laid upon a venereal origin and the obloquy associated with this cause. The disease is by no means always venereal and prophylactic treatment is facilitated by keeping this fact prominently to the fore. The author strongly advocates notification but notification alone is of little assistance and the much more important problem of efficiently treating the cases after they have been notified receives scant attention. We have already recently discussed the subject elsewhere.[1]

The book shows signs of hasty production but will serve a useful purpose if it helps to attract attention to the urgent need of active measures.

The Opsonic Method of Treatment: A Short Compendium for General Practitioners, Students, and Others. By R. W. ALLEN, M.B., B.S. Lond., Pathologist to the Royal Eye Hospital, London, S.E., &c. London: H. K. Lewis. 1907. Pp. 138. Price 5*s.* net.

AN account is given in this book of the theories which have been put forward as to the nature of opsonins and much information is furnished as to the method of carrying out opsonic determinations and as to the preparation and use of vaccines; indeed, the main interest lies in the account which it gives of bacterial inoculation in various infective diseases. The author records many interesting results obtained by himself, not the least interesting being those dealing with the vaccine treatment of nasal catarrh. Since, however, the determination of the opsonic index is merely a means of estimating the degree of immunity produced by a vaccine, and as the author admits that opsonins are not the only factors in immunity, it seems a mistake to separate those vaccines which have so far been controlled by this method from those to which it has not yet been applied. For example, antityphoid inoculation is clearly allied to the subjects here dealt with, yet it is not included. On the other hand, several antituberculous vaccines are mentioned to which, so far as we are aware, opsonic estimations have not been applied, including Behring's tulase which is not even obtainable.

As a record of the author's own work the book has a definite value but from a general point of view we are inclined to think its appearance premature. It would probably have been of considerably greater value if its publication had been postponed till greater certainty had been obtained as to the exact value of opsonic determinations, a question which is now *sub judice*, and until a richer material was available upon which to base an opinion as to the place which bacterial inoculation is to hold in medical practice.

[1] THE LANCET, August 24th, 1907, p. 538.

LIBRARY TABLE.

Das Wesen der Bösartigen Geschwülste. (*The Character of Malignant Tumours.*) Eine biologische Studie von EMIL VON DUNGERN und RICHARD WERNER. Leipzig: Akademische Verlagsgesellschaft m.b.H. 1907. Pp. 158. —The authors have produced under the auspices of the Institute for Cancer Research in Heidelberg an interesting account of the biological problems involved in the origin and growth of malignant tumours. The frequency of their occurrence in both man and animals and the situations in which they originate are first considered. Special reference is made to their relationship to normal tissues and to abnormal conditions, such as scars, malformations, and chronically irritated tissues, and also to chorionic structures. The problems of multiple primary growths and of metastasis are next considered and then the authors give in considerable detail the laws of growth of normal tissues in so far as they are at present known, leading on to a consideration of the laws governing the growth of the elements of malignant tumours, including also the conditions leading to degenerative or secondary changes in these growths. The results of transplantation are considered and also the differences between the cellular elements of normal and malignant structures. The theories of malignancy are then categorically enumerated to the number of 14 and are briefly criticised. The problems of the etiology are also studied under the following heads: congenital malformations, external influences, micro-organisms, malignant growths in animals, and statistical considerations regarding heredity, locality, and incidence. The book is thoroughly interesting and readable, and one of its chief merits is that it presents certain aspects of the problem of malignancy from a biological rather than from a clinical standpoint and is thus original and suggestive in character. It contains, moreover, brief records of interesting observations on the cytology of malignant growths made by the authors themselves.

Practical Medicine Series. Vol. IV., *Gynecology.* Edited by EMILIUS C. DUDLEY, A.M., M.D., Professor of Gynecology, Northwestern University Medical School, Chicago. Series 1907. Chicago: The Year Book Publishers. Glasgow: G. Gillies and Co. Pp. 229. Price 5*s.* net.—It is difficult at the present day, when so many advances are being made in all branches of medical science, for the practitioner, or even the specialist, to keep himself abreast of the ever-increasing knowledge. A series of this kind serves therefore a useful function, as it tells

the general practitioner all that he requires to know of the advances in any particular branch of medicine in which he may be interested and provides an index for the specialist, enabling him to refer to the original articles for further information on any particular subject. A good deal of the utility of such a book depends upon the care with which it is edited and the nature of the selection of the abstracts which is made. In the present book the work has, on the whole, been well done. It contains notices of a large number of papers dealing with many different gynæcological subjects and it cannot fail to give a good deal of information to anyone who may consult it. If it does not contain any very startling advance in the practice of gynæcology, at any rate it summarises a large amount of useful work which has been done.

Methode der Zuckerbestimmung. (*A Process for the Quantitative Estimation of Sugar.*) By Dr. IVAR BANG. Berlin: Julius Springer. 1908. Price 50 pfennig (6*d.*).—This description of a volumetric process for the estimation of sugar is printed on a card which measures about eight by seven inches and is folded in the middle so as to form a kind of four-page pamphlet. The author is professor of medical chemistry in the University of Lund in Sweden. Two solutions are required, both of which will keep for any length of time. The first contains in two litres 500 grammes of potassium carbonate, 400 grammes of potassium sulphocyanide (*Rhodankalium*), 100 grammes of potassium bicarbonate, and 25 grammes of crystallised copper sulphate. The second solution contains in two litres 200 grammes of potassium sulphocyanide and 6·55 grammes of hydroxylamine sulphate. A mixture of 10 cubic centimetres of the saccharine solution and 50 cubic centimetres of the copper solution is boiled for three minutes and then cooled, after which the solution of hydroxylamine sulphate is added till the colour disappears. The quantity required for this purpose indicates the amount of sugar in accordance with a table which is shown.

Imperial Brown of Brixton. By REGINALD TURNER. London: Chapman and Hall, Limited. 1908. Pp. 311. Price 6*s.*—We do not know why this amusing book was sent to us to review, for the work is of no medical interest and is not written by a medical man. We have, however, read it and been greatly tickled by the adventures of Imperial Brown, so that it would be ungrateful not to acknowledge our little debt of gratitude. "Imperial Brown of Brixton" is at once the hero and the butt in the various mischances which befall him during his first sojourn on French soil, and his wildly improbable adventures are related with such strict accuracy of detail and close knowledge of French manners and customs that we find ourself regarding the story, despite our faculties of reasoning, as a report of actual occurrences. A good laugh is often a good medicine, and in circumstances where laughter might be therapeutically useful here is a book which contains many doses of the drug.

JOURNALS AND MAGAZINES.

The Edinburgh Medical Journal.—In the February number of this magazine are published the first and part of the second Morison lectures delivered by Dr. Lewis C. Bruce before the Royal College of Physicians of Edinburgh. The subject dealt with is acute mania and reasons are given for holding that this condition is an intoxication probably produced by bacterial infection. Mr. H. Alexis Thomson calls attention to latent gastric and duodenal ulceration as a cause of death after operations for other conditions; and Mr. John M. Darling points out the value of leucocyte examinations in suppurative conditions arising from middle-ear infections. Mr. Alexander Miles describes a plastic operation performed on the pelvis of a kidney for relief of intermittent hydronephrosis, which resulted successfully, and Mr. James M. Graham discusses Cancer originating in Bartholin's Glands, giving an account of a case of this condition.

The Albion Magazine (No. 4, February).—This little magazine, which has been founded in the interests of the deaf, shows signs of thriving and we are in sympathy with its objects. The present number contains the first of a series of articles on quack advertisments by "Surdus." A previous series has been published and some of the articles have been reprinted in a book called "Surdus in Search of his Hearing." Inside the covers of this journal is printed a list of hospitals where the indigent deaf can receive proper attention. There is much interesting matter for the general reader and we think that medical men would do well in calling the attention of their deaf patients to this little "monthly magazine review."

The Scottish Medical and Surgical Journal.—Mr. J. W. Dowden publishes in the February issue of this journal an account of 100 consecutive operations for appendicitis. He maintains not only that immediate operation is called for in all cases, but that if a patient recovers from an attack, however mild, without the benefit of operative treatment he should have his appendix removed subsequently. Dr. F. Gardiner narrates some favourable experiences with x ray and high-frequency treatment in pulmonary and glandular tuberculosis and in lupus vulgaris; the paper is not concluded in this issue. Miss Katherine J. S. Clark, M.D. Edin., writes on rheumatoid arthritis and calls attention to the need for study of morbid lesions occurring in other parts of the body besides the joints.

The Birmingham Medical Review.—In the January number Mr. John W. Taylor records the results of operations for shortening the round ligaments of the uterus in a series of 85 patients. He describes the mode of procedure to be adopted and speaks enthusiastically in favour of the method. Dr. John T. Hewetson writes on encapsuled tumours of the kidney, generally known as hypernephromas, and believes them to originate in remains of the Wolffian body.

The Medical Chronicle.—An address delivered by Dr. R. G. Rows before the Burnley and District Medical Society on the subject of Hallucinations is published in the February number of this journal. After discussing the nature of the mental processes involved he emphasises the need for early recognition of this form of mental disorder before it has become fully developed. Dr. R. F. Vere Hodge writes on Hyperpiesis, or increased blood pressure, as compensatory for increased peripheral resistance, this resistance being due in some cases to spasms of arterioles and in others to increased viscosity of the blood.

The Middlesex Hospital Journal.—The number for January contains an abstract of a lecture by Dr. J. Strickland Goodall on Appetite and its Value in Digestion. Mr. N. Bishop Harman suggests a simple mode of charting the movements of the ocular muscles and the forms of diplopia consequent on their paralysis and quotes two cases of diplopia produced by accidental falls.

The Guy's Hospital Gazette.—In the issue of Feb. 8th appears a clinical lecture by Mr. R. P. Rowlands dealing with two cases illustrating the Value of Tendon-grafting in Orthopædic Surgery; one case was of talipes calcaneo-varus and the other one of hyperextension of the great toe. Dr. H. C. C. Mann continues his observations on Arterial Blood Pressure, the present instalment being devoted to cases of renal disease.

St. Bartholomew's Hospital Journal.—A very interesting lecture by Dr. T. J. Horder is published in the February issue of this magazine. It deals with treatment by specific inoculation in practice and theory, and perusal of it may be commended to all who are engaged in work of this nature. Two instances are recorded in which very good results were obtained by vaccine treatment; allusion is also made to one in which good was supposed to result from inoculation with

a bacterium isolated from a patient's blood, but necropsy proved that the malady had been due to quite a different organism. In the realm of theory Dr. Horder has the honesty to admit that he is ignorant of the exact mode in which inoculation acts in raising resistance to a disease and he is sceptical as to the value of opsonic determinations. Mr. B. T. Lang's paper on Local Anæsthesia is concluded in this number and Dr. Samuel West contributes a short note on the Acute Suffocative Catarrh of Laennec.

Reports and Analytical Records FROM THE LANCET LABORATORY.

NOVASPIRIN.

(THE BAYER CO., LIMITED, 19, ST. DUNSTAN'S-HILL, LONDON, E.C.)

Novaspirin is described chemically as methylene-citryl-salicylic acid which decomposes in the intestinal tract into salicylic acid and methylene-citric acid. It possesses the same therapeutic properties as salicylic acid but is stated to be without the unpleasant effects which sometimes are known to follow the administration of the ordinary acid. It is quite innocuous in the stomach and its effects are not obtained until the drug is decomposed in the alkaline environment of the intestine. Novaspirin is a white crystalline powder without odour but with a faint sour taste. It is soluble in alcohol but insoluble in water. It readily yields salicylic acid on saponification with alcoholic potash. The salt contains 62 per cent. of salicylic acid. It has been used in influenza, it is stated, with gratifying results and in other conditions in which an analgesic is indicated. Needless to add it is employed also in rheumatism and in gouty conditions.

FORMATHOL.

(ARTHUR H. COX AND CO., BRIGHTON.)

Formathol tablets present an excellent means for administering a local antiseptic in the mouth and upper passages of the throat. The formic aldehyde is present in a loose state of combination but is released when it comes into contact with the saliva. The taste is not unpleasant. There is present also in formathol menthol which is well known, of course, for its local anæsthetic effects. The combination, therefore, is an excellent one for the disinfection of the mouth and throat and the powerful antiseptic action of the formic aldehyde is calculated to intercept a septic process.

TASTELESS COD-LIVER OIL.

(A. V. RUFS, 115, BATTERSEA PARK-ROAD, LONDON, S.W.)

As far as physical constants go the evidence was in favour of this oil being correctly described as pure. The figures in regard to specific gravity and the amount of insoluble fatty acids accorded with those shown by cod-liver oil of unquestionable origin. The oil was of a straw-yellow colour and to the taste was satisfactory, although there could be no doubt about it being that of cod-liver oil. The oil was, at any rate, free from acrid flavour and was decidedly less disagreeable to the taste than ordinary cod-liver oil.

PURE MALT WHISKIES.

(WILLIAM GRANT AND SONS, LIMITED, THE GLENFIDDICH DISTILLERY, DUFFTOWN, N.B.)

Our analyses of these whiskies indicate that the statements made in regard to them are honest, that is to say that they are pure malt whiskies distilled in the pot-still. Moreover, the evidence of the palate is in favour of the statement that they are fully matured. The flavour while malty and rich is "soft." The specimens examined were marked respectively Glenfiddich and Balvenie Highland Pure Malt Whisky. A feature in the analytical results was the amount of ethers. In the first-named spirit there were present 75 parts per 100,000 parts of alcohol and in the second sample the ethers amounted to 86 parts per 100,000 parts of alcohol present. The higher alcohols in both cases amounted to 200 parts per 100,000 parts of alcohol. The amount of ethers represents a maximum quantity for whisky. It may be remarked also that the acidity of these whiskies was practically *nil*. The alcoholic strength of both samples was approximately the same—namely, 40 per cent. of alcohol by weight. The extractives in both cases occurred in unimportant amount. These whiskies are well adapted for special dietetic purposes.

GLUTEN BREAD.

(H. VITRAC GIRAUD AND CO., 11, IDOL-LANE, GREAT TOWER-STREET, LONDON, E.C.)

This is an excellent specimen of gluten bread, which, however, was not free from starch, as shown by the iodine test and by microscopical examination. The moisture amounted to 10·06 per cent., the mineral matter to 4·00 per cent., and the gluten to 55·74 per cent. The difference may be regarded as representing the starch present. The amount of starch present is considerably less than half that contained in wheat flour. The bread was pleasant to the taste and readily softened under the influence of the saliva. The addition of salt was evident.

FEMMENLACTYL TABLETS.

(ANGLO-AMERICAN PHARMACEUTICAL COMPANY, FRITH-ROAD, CROYDON.)

These tablets contain a pure lactic ferment said to be prepared from the special bacillus of Bulgarian milk and their object in administration is the prevention of intestinal putrefaction. They act by introducing into the intestine bacilli which are directly antagonistic to those which attack proteins, the decomposition of which amounts to a putrefactive process. The views of Professor Metchnikoff are well known on this subject; he looks upon senility as a chronic disease having its origin in the poisons formed by the bacteria of putrefaction which inhabit the large intestine.

GIESSHUBLER (MATTONI'S).

(AGENCY, INGRAM AND ROYLE, EAST PAUL'S-WHARF, 23, UPPER THAMES-STREET, LONDON, E.C.)

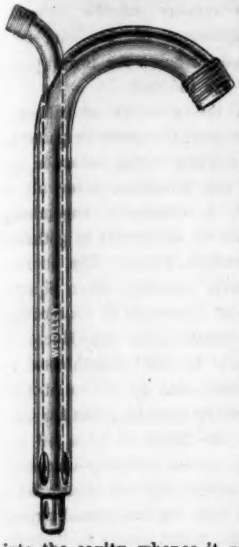
According to our analyses Giesshübler water is mildly alkaline and contains carbonic acid gas in the free state but not in excess. The water is peculiarly soft to the palate and leaves a sense of cleanly condition in the mouth. We found that it contained mineral salts to the extent of 1·64 grammes per litre of which 1·37 grammes consisted of carbonate of sodium. This amount is equivalent to 2·18 grammes of bicarbonate of sodium. It also contains a small quantity of potassium bicarbonate and the spectroscope showed the presence of distinct traces of lithium. Lime salts are not present in appreciable quantity. There were also traces of iron and magnesia. The water is well suited for those who are benefited by a course of akaline water treatment as in gastric catarrh and allied conditions.

New Inventions.

A DOUBLE-CHANNEL, SYPHON-ACTION, ABDOMINAL IRRIGATOR.

THE chief objection advanced against irrigation in cases of peritoneal infection is the risk of diffusing such infection to parts of the cavity not already involved. This undoubtedly must happen wherever provision has not been made for an exit for the fluid at least as free as its entrance. In the method of abdominal irrigation usually adopted the fluid is introduced through a simple tube of glass or rubber which is passed in turn into the contaminated areas and reliance is placed upon the fluid escaping by forcing its way outwards along the side of the tube. This it readily does, provided the contaminated area is close to the wound through which the tube is introduced, but if at some distance therefrom the intervening coils of intestine close round the tube and hinder or even prevent the return of the fluid, which consequently tends to spread laterally to other regions of the peritoneum.

This risk can be obviated to a large extent by introducing along the side of the tube through which the fluid enters a second tube of larger bore to allow of its ready escape. In order to obviate the necessity of introducing two tubes, and also of further aiding the escape of the fluid by syphonage, I have designed the irrigator here figured and have to thank Messrs. James Woolley, Sons and Co., Limited, of Manchester, for its careful execution. It is on the principle of the "double-channel" catheter and is made of plated copper. The nozzles are fluted for the ready attachment of rubber tubes; to the smaller nozzle is attached a tube leading from the reservoir of the fluid to be used for irrigation (usually warm sterile saline solution), while to the larger is fixed a tube about two feet long, the end of which hangs over a receptacle placed on the floor beneath. I usually interrupt this latter tube by a small section of glass tubing so as to recognise when the escaping fluid becomes clear. The fluid entering at the small nozzle passes along the inner tube and escapes by a terminal aperture and lateral openings into the cavity, whence it passes by lateral holes into the outer tube, carrying with it the septic material; it then ascends the outer tube and enters the exit drainage tube. Once it has passed down this for a distance equal to the length of the irrigator syphon action is established and the fluid is "sucked" out of the cavity as fast as it enters, any tendency towards lateral diffusion being thereby effectually counteracted. If the cavity to be flushed is close beneath the wound the syphon action will probably not come into play, the fluid escaping more readily by the side of the irrigator, as in the method of flushing usually adopted, but wherever there is any resistance to such free escape the syphon would at once be started. The cross section of the entrance and exit tubes and the size of the terminal and lateral apertures have been carefully caculated so as to insure a freer exit than entrance. The end of the instrument and other parts have been well rounded off, so that the irrigator can be pushed safely into any part of the peritoneal cavity without danger of injury to the viscera. It is very conveniently held in the palm of the hand, the forefinger passing beneath the smaller nozzle, the other fingers beneath the horizontal portion of the outer tube. A feature of its use most appreciated by nurses is the almost entire absence of mess as compared with the methods at present in use for abdominal irrigation—the fluid passes directly from the douche reservoir through the cavity to be irrigated and thence into the receptacle below the operating table, without escaping at the wound and flooding the field of operation.

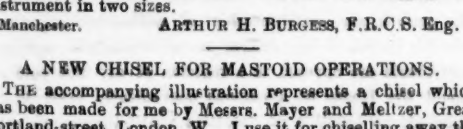


Messrs. Woolley, Sons and Co., Limited, supply the instrument in two sizes.

Manchester. ARTHUR H. BURGESS, F.R.C.S. Eng.

A NEW CHISEL FOR MASTOID OPERATIONS.

THE accompanying illustration represents a chisel which has been made for me by Messrs. Mayer and Meltzer, Great Portland-street, London, W. I use it for chiselling away the posterior meatal wall in mastoid operations. The cutting



edge being turned forward allows the bone to be cut away horizontally and parallel to the facial canal, whilst the angled handle keeps the fingers holding the instrument out of the line of vision.

W. S. KERR, M.B., C.M. Edin., F.R.C.S. Edin.,
Honorary Surgeon, Ear and Throat Department,
Sheffield. Sheffield Royal Infirmary.

Looking Back.

FROM

THE LANCET, *SATURDAY*, Feb. 27th, 1830.

COLLEGE OF PHYSICIANS.

Feb. 8 *and* 22.

BRAIN FEVER—IONIAN ISLANDS.

THE first evening meeting of the College of Physicians took place on Monday the 8th of February, and the attendance was very numerous. Amongst the visitors were, the Duke of Wellington, the Lord Chancellor, the Lord Chief Justice of the Court of King's Bench, and the Chief Justice of the Court of Common Pleas, &c. &c.

Sir HENRY HALFORD, in his address to the assembly, offered his congratulations on the benefits likely to be derived by this body, and medical men in general, from the statistical reports of the various forms of disease, and methods of treatment in foreign countries; and he expressed his sense of the obligation under which the public lay to the Secretary of State for Foreign Affairs, and the Secretary for the Colonies, for the assistance rendered by them in the furtherance of their inquiries.

The PRESIDENT then read a paper on the disease commonly called *brain fever*. The dissertation was replete with learned observation and classical lore, to the merits of which the noble Duke was constantly *nodding* assent.

On the 22d, the College held its second meeting, which was well attended. In the course of the conversazione, attention was suddenly arrested by the appearance of a woman with a naked infant in her arms, who, by its cries and gestures, seemed not at all pleased with the honour of the *fellowship* bestowed on it. On approaching the child, we found it to be a case of nævus maternus. The back, in particular, was covered with brown spots, on which a kind of light down was visible; but there was nothing to render the case more curious than others of a similar nature.

Sir HENRY HALFORD briefly addressed the meeting, saying that some despatches had been received, in answer to the queries put by the College, in pursuance of the plan mentioned by him on the former evening; and these would now be read by the registrar.

Two papers were accordingly read, one from the Medical Committee of Malta, the other from Corfu; containing details respecting the whole of the Ionian Islands, with the exception of Cerigo. The particulars regarded the population, soil, climate, disease and mode of treatment, number of deaths, &c. &c. of the places to which the papers referred. In Malta, we learn, the longest lives are about 98 years, whilst the inhabitants of the Ionian Islands sometimes reach 110. The most common diseases in the latter islands are, dysentery, diarrhœa, intermittent fevers, dropsy, consumption, &c. among adults; and marasmus and convulsions among children. In Malta, the men are about five feet six inches in height; in Ionia, well-made and approaching to tallness. The medical men of Malta are principally educated in Italy, but there is an university in the island, in which there are five medical professors. In Corfu and the other islands there are very few regular practitioners, and the treatment of diseases is consequently entrusted to the quacks, and old wives, whom experience, however, has taught the use of very proper remedies, at the same time that they employ *spells*, in which their superstitious patients place great faith. They have also instruments of their own invention for many of the operations of surgery, such as hernia, &c.; and, although somewhat rude and different from those used by ourselves, they become very useful from the manual dexterity which the operators acquire.

THE MIDDLESEX HOSPITAL.—After holding the office for six years Mr. John Murray has resigned the deanship of the Medical School. Dr. H. Campbell Thomson has been elected in his place.

THE LANCET.

LONDON: SATURDAY, FEBRUARY 29, 1908.

The Ventilation of the House of Commons and Influenza.

INFLUENZA appears once again to have reached the magnitude of an epidemic amongst us and its existence is accentuated, at any rate in the view of the lay mind, by the number of prominent public men reported to have been attacked. The prevalence of the disease amongst the Members of the House of Commons has on more than one occasion led scientific men to ask themselves seriously the question whether influenza was endemic in the debating chamber. Select Committees have been appointed and have reported some interesting scientific evidence bearing upon this question, but still the faithful Commons are susceptible to the attacks of the disease. The most important investigation of all was that undertaken very ably and thoroughly by Dr. M. H. GORDON whose report was presented to both Houses of Parliament in June, 1906. As a result of this investigation, which contains many interesting details of the utmost value in regard to schemes of ventilation in general, a number of recommendations for the improvement of the ventilation of the House of Commons was submitted to a committee which included in its *personnel* the late Sir MICHAEL FOSTER (chairman), Dr. J. S. HALDANE, Dr. GORDON, and Mr. A. P. PATEY (the resident engineer to the Houses of Parliament). This committee was of opinion that many of the recommendations should be put in hand without delay and more particularly those which referred to the treatment of the air on its passage from the battery chamber upwards. There was no sort of claim made that the investigations so far carried out covered the whole subject, and indeed it was admitted that "the warming of the ingoing air and several other matters need to be investigated." An obvious improvement in the quality of the air, because probably of the increased quantity supplied, followed the introduction of a more powerful centrifugal fan than had been hitherto used, although the distribution of the air was still very imperfect. This improvement was instructive inasmuch as it proved that previously the supply of fresh air was deficient and therefore defective. Objective tests such as those depending upon bacteriological and chemical examination of the air disclosed on the whole a satisfactory standard, but such results were not consistent with the subjective tests of Members' own feelings. "It was the common experience of many Members that the air of the chamber 'lacks freshness,' that there are some qualities possessed by it which lead to a stay for a length of time in the chamber causing in Members a lassitude and feeling of heaviness which tends to interfere with the due performance of their duties." According to Dr. GORDON, "want of freshness" due to an excess of temperature and humidity of the air can be definitely excluded in the case of the debating chamber, except during the hot days of the summer months. According to the records the temperature of the air since 1896 has been uniformly maintained below the lowest point at which unpleasant symptoms are induced.

The question remains, can the outbreak of influenza amongst the Members of the House of Commons be traced to any specific kind of pollution existing during debate in the air of that chamber, or is not influenza, after all, a disease the spread of which is commonly engendered wherever a relatively great number of persons is gathered together in a more or less confined space? The church, the theatre, and the law courts probably serve equally effectively as does the House of Commons as distributing centres of these and other diseases. In the House of Commons, however, the chances of the air being infected by the act of articulation are accentuated by the number of Members engaged in active forcible speaking. As has been pointed out, infected persons are liable to give off the *materies morbi* when they cough, sneeze, or loudly articulate, and Members still in the convalescent stage are often present during a debate. At the time when bacteriological experiments were made the ventilation failed either to limit the spread of breath-borne particulate material or to remove it efficiently from the chamber. An increased supply of air would, of course, attenuate this material and tend to diminish susceptibility. Bacteriological experiments also indicated that if Members could be induced to change their boots before entering the precincts of the House the air would be bacteriologically much better for this simple precaution. Analysis at all events showed that the air of the chamber derives particulate material from Members' boots, and the fact is not surprising in view of the delicacy of modern methods of testing.

The ventilation of the House of Commons may leave much to be desired, but we doubt whether any means of supplying air in a chamber containing a large concourse of persons animated by debate will ever be so effectively carried out as to prevent with certainty the transmission of disease. The difficulty always has been, and will be, that of providing at the same time an uncongenial or unfavourable environment for the pathogenic entities which are ever present and an atmosphere suited to the healthy requirements of the human organism. We know that warmth and moisture foster the growth and multiplication of pathogenic organisms, but the human being desires to be comfortable and most individuals are opposed to a regimen of dry and cold air. Could the House of Commons conveniently meet in the open air no question of defective ventilation could arise. There is one other point which occurs to us. No complaint seems to have been made as to the ventilation of the House of Lords. Is the condition of air-supply so effective there as to disarm criticism, or is it that the members of the Upper House so far have been denied the same publicity which the members of the Lower House have gained when influenza has attacked them, or, lastly, can it be because they are not so severely afflicted as the Commons with what may in this respect not inaptly perhaps be termed *cacoëthes loquendi?*

Venereal Diseases in the Transvaal.

NEARLY all who consider the wide extent and the severity of the incidence of venereal disease feel that some attempt should be made to limit the spread of this infliction. We say "nearly all," for there are still a few who look upon venereal disease as a just punishment of vice, forgetting, or at least neglecting, the fact that many cases occur in which the victims are blameless, and surely into this class fall all the cases of congenital syphilis. One of the latest attempts to control venereal disease has been made by the Government of the Transvaal Colony. In October, 1906, a Commission on Contagious Diseases amongst Natives was appointed by the Acting Lieutenant-Governor, and by the euphemistic title of "contagious" it is unfortunately customary to designate venereal diseases. The members of the Commission were Sir GODFREY YEATMAN LANGDEN, K.C.M.G., Dr. CHARLES PORTER, and Dr. GEORGE TURNER, and the terms of the reference were (*a*) to consider and to report to what extent contagious diseases are prevalent amongst the native population in the Transvaal, and (*b*) to submit a definite scheme for the treatment of such diseases suitable to the conditions of life of the natives. A large number of medical men from the native districts and from the mines gave evidence before the Commission, as well as several lay officials and three native chiefs. A point of interest in regard to the native names for the venereal diseases is that these names are all of comparatively recent introduction; they have been coined to serve as names for the manifestations of a newly introduced disease. This is especially true of the names for the various manifestations of syphilis.

The relative frequency of the different venereal diseases—namely, gonorrhœa, soft chancre, and syphilis—appears to vary greatly in different parts; for instance, Dr. W. H. BRODIE, who has some 10,000 mine "boys" under his charge, thinks that among them gonorrhœa is practically non-existent; and Dr. MAX MEHLISS, who is medical superintendent at the Rietfontein Lazaretto and has had much experience amongst natives, thinks that compared with syphilis soft chancre and gonorrhœa are of infrequent occurrence; on the other hand, Dr. R. P. MACKENZIE declares that amongst the prisoners in the Johannesburg Gaol gonorrhœa is the commonest venereal disease. Even as to the severity of gonorrhœa different opinions prevail, for Dr. D. MACAULAY considers that in natives it is milder than in Europeans; while Dr. H. P. VEALE has found that it is as severe in natives as it can possibly be. As to syphilis it seems to be clear that its introduction is comparatively recent and in some cases the exact time of its introduction can be fixed. Some of the Kaffir chiefs were able to name the very man who had brought the disease into their tribes. Mr. E. C. LONG stated that syphilis was unknown in Basutoland before 1876. MOLABA, from Mpahlela's Location in the Zoutpansberg, said that he saw the disease first in 1884. It was brought by a man who came from Kimberley. In most cases it was brought to the kraals by natives returning from work at some mining centre. The extent to which syphilis prevails varies enormously in different districts, from "very little" to "over 90 per cent. of the total population." Dr. G. A. TURNER, who examined every year many thousands of natives for the Witwatersrand Native Labour Association, stated that the percentage of natives whom he stopped for syphilis was very small indeed; in fact, less than 1 in 200. Dr. MACKENZIE, who had until recently charge of the Johannesburg Gaol, considered that less than 2 per cent. of natives were suffering from syphilis. The conclusion at which the Commission arrived was that syphilis was remarkably uncommon among all classes of natives seeking employment on the mines. The evidence as to the degree of infection of the natives outside the mining and labour areas varies greatly. Mr. J. J. LOWELL considered that nearly 80 per cent. of the population in his district suffered from syphilis. Mr. K. H. R. FRANZ, a German missionary with some medical training, believed that not less than 75 per cent. of the Basutos and Matabeles were affected with syphilis. The disease seems to be spreading widely in the Cape Colony and some other districts but Dr. S. R. SAVAGE thinks that it is decreasing in Basutoland. On the whole, half-castes are much more severely affected by syphilis, while the pure-bred native often has so mild an attack of the disease that he does not apply for treatment. Many of the medical witnesses mentioned that they had met with cases in which white children had become infected through being kissed by syphilitic native nurses.

The suggestions made by the Commission as to the treatment and control of the disease are well worthy of consideration. The Commissioners suggest that the labour districts as centres of infection should be dealt with by measures based on a special Contagious Diseases Act similar to that of Cape Colony and that for the successful working of such an Act accommodation should be provided for infected persons. They consider that one large institution near Johannesburg would be preferable to several small lock hospitals. They suggest that all natives should be examined at the pass offices for evidences of syphilis, as is now done with regard to vaccination, and that the public should be advised to have coloured nurses medically examined before intrusting their children to them, and this examination should be periodically repeated. As to country districts, they advise that stations should be established in various parts where treatment could be carried out and that district surgeons should be provided with potassium iodide for free distribution and that, where practicable, the district surgeon should make periodical tours to discover and to treat syphilitics. As to the cost of these remedial measures, the report of the Commission points out that much lameness, blindness, and disfigurement are caused by syphilis and that many exemptions from taxation are consequently necessary, and Mr. C. A. WHEELWRIGHT, C.M.G., Native Commissioner in the Zoutpansberg, considers that the amount of revenue thus lost would more than repay the Government for any expenditure incurred in eradicating the disease. Moreover, most of the natives have a great horror of the disease and they would probably be willing to pay an inclusive sum such as 10*s.* or £1 for treatment. An inclusive sum is probably better than a payment per visit, as there is less inducement for the patient to discontinue treatment after a certain amount of improvement has been obtained. In

pauper syphilitic patients it is suggested that the same fee should be paid as is paid at present in the Cape Colony; this is 7*s.* 6*d.* per month per patient, the medical man providing all necessary medicines, except potassium iodide, which is supplied free by the Government. Headmen are also paid 1*s.* 6*d.* for each fresh case and 3*d.* for each old case brought up monthly. This is an excellent device for insuring the regular attendance of the patients and it is at present in use in the Cape Colony. We have entered in some detail into this report because we consider that it is essential that the spread of the disease should be stopped and that the measures advocated by the Commission are reasonable and as they contain little to which exception can be taken they are likely to be adopted. The evil is great and by no means confined to the immoral; the good of the State requires that it should be combated with as much energy as possible. We recommend the report of the Commission to the consideration of all who are interested in arresting the decadence of native races.

Delayed Chloroform Poisoning.

WE publish in our present issue reports of seven cases of that curious condition which has been variously named by different observers. BASTIANELLI in 1890 recorded what were probably the first observed instances of this toxæmia. The symptoms which he detailed were those now so familiar to us and in the necropsy fatty changes were noted in the muscles both cardiac and skeletal, in the kidneys, and in the liver. The hepatic changes which we now regard as typical were duly recorded. It is true that these pathological changes had been obtained experimentally at an earlier date but anything like a causal connexion was not arrived at before the careful clinical work of Dr. LEONARD G. GUTHRIE was published. CASPER'S often-quoted assertion that "chronic" poisoning from chloroform must be admitted and reckoned with appears to have referred to the ingestion of massive quantities of the anæsthetic, although the word "chronic" may be accepted as being employed in the sense of "delayed" or "postponed." NOTHNAGEL had demonstrated in 1866 that chloroform when introduced under the skin or into the stomach produced fatty changes in the viscera and that the toxæmia killed animals. Similar results occurred, as UNGAR showed, even when the anæsthetic was inhaled, and the extent of the fatty change was further proved by STRASSMANN to bear some relation to the antecedent condition of the animal, being markedly increased after hæmorrhage or other depressing circumstance.

Perhaps the most important research upon this subject is that which was undertaken three years ago by OFFERGELD. This observer was able to reproduce with startling uniformity both the clinical and the pathological features of delayed chloroform poisoning, but his success in this regard forces upon the thoughtful mind the questions: (1) Were his results not rather due to excessive quantities of chloroform, a drug which has been recognised to possess a powerful toxic effect upon protoplasm? and (2) why do any patients who inhale chloroform ever recover from the toxæmia which apparently should be regarded, if we admit OFFERGELD'S findings without reservation, as necessary rather than as occasional? The clinical work which has been done, although it has made the condition capable of easy recognition, has as yet been unable to apportion the share which various factors have in producing the fatal result. Dr. GUTHRIE'S judicial summing up of our knowledge carries us sufficiently far to make it desirable that the designation "delayed chloroform poisoning" should be replaced by some phrase which does not commit us to a pathogenesis which is as yet not beyond question. Mr. E. D. TELFORD, who has recorded several cases with extreme care, urges the necessity for further evidence. He believes that the instances of this toxæmia are less infrequent than is assumed and insists on the importance of records being kept of every case and of a careful comparison being instituted between them. Dr. GUTHRIE in this country and Dr. BEVAN and Dr. FAVILL in the United States have set excellent examples.

It seems clear from the evidence at present before us that many factors are at work. The causal influence of antiseptics such as carbolic acid, of starvation, of fatty diet such as cod-liver oil, of sepsis, and of fat embolus appears to be *nil*. The constant factors are the anæsthetic and the operation together with the antecedent condition of the patient. It is extremely difficult to understand how a drachm or two of chloroform given from a mask, which would represent a very insignificant amount actually entering the circulation, could affect directly or indirectly the musculature and viscera of the entire body; and it seems as unlikely that so slight an operation as circumcision should cause shock or should initiate any profound nervous catastrophe such as would destroy the trophic control of the system. Whatever the causation there appears to be a clear picture before us of the results of a toxæmia. The liver within a few days of the operation is robbed of its power of metabolising, its structure becomes fatty, and neither it nor the kidneys can any longer maintain elimination of by-products, with a result that the state called acidosis appears. The acetone smell of the breath and the presence of diacetic acid and of β-oxybutyric acid in the blood and urine may or may not occur and are probably symptomatic rather than causal. Most authorities insist upon the fact that the changes in the liver lobules, although superficially resembling those of acute yellow atrophy, are essentially distinct, that indeed the fatty necrosis of the cells seen in the condition which we are considering is not identical with any other pathological change. The weight of opinion is expressed by Dr. GUTHRIE when he says that it seems most probable that the anæsthetic or whatever is the determining cause of the process acts concurrently with some antecedent morbid state; whether it is "inadequacy" of the liver or what else we do not know. Certainly it is difficult to accept any other theory. As to prophylaxis and treatment it must be admitted that we have no certain guides. We know that the anæsthetic when given experimentally produces effects proportional to the quantity given and to the duration of the administration, and this would appear to indicate that the less of the anæsthetic which enters the circulation the greater are the chances of the patient's recovery. And that recovery does take place should be remembered. Again, we have learned from experiment that chloroform acts most potently when oxygen is deficient and the hæmoglobin of the

cells is depreciated, facts which indicate the employment of oxygen or at least the greatest care to avoid asphyxial complications. Whether the condition is associated with the lymphatic state is at present uncertain and space forbids us to discuss that matter now. Treatment, except upon general lines, has proved unsatisfactory and probably prophylaxis is far more important.

Annotations.

"Ne quid nimis."

THE PAYMENT OF MEDICAL PRACTITIONERS SUMMONED BY MIDWIVES.

THE Local Government Board has republished during the present month a circular letter which it addressed to clerks to boards of guardians on July 29th, 1907, and in which it indicates a course of action with regard to the payment of medical practitioners summoned by midwives which should, it somewhat recklessly declares, leave "no reasonable ground of complaint" either to the public or to the medical profession. The Board advises that medical men should be informed that in cases arising under Rule 18 under the Midwives Act the guardians will, "on being satisfied that the woman is too poor to pay the medical fee," be prepared to exercise their powers under Section 2 of the Poor-law Amendment Act of 1848 and to pay a reasonable remuneration to the medical man called in; in other words, a board of guardians which chooses to decide that the woman is not "too poor" to pay will be exempt from all liability to the practitioner. We have pointed out frequently that the provisions of the Midwives Act place upon all medical practitioners an entirely new responsibility. An ordinary summons to a patient is a matter about which a practitioner may exercise an unfettered discretion, going or declining to go as may seem good to him; but a summons under the Midwives Act is a very different matter: it is a declaration from a person pronounced by the legislature to be competent that the patient is in urgent need of assistance which only a medical man can render, and the conditions which would justify neglect of such a summons or refusal to attend to it with all possible promptitude would be of very rare occurrence. Practically the medical man receiving it would be bound to go, and to go without delay, at whatever inconvenience to himself or at whatever disturbance to other, and perhaps equally important, work. The emergency is one created by the State and it is the clear duty of the State to secure the practitioner so summoned against loss. There need be no question of the right of the guardians, as laid down in the circular to which we refer, to determine who, by reason of poverty, is entitled to medical assistance at the expense of the rates, but it should be their clear duty to pay the medical man called in by a midwife in every case in which the patient fails to do so and to exercise their discretion as to taking proceedings to recover the amount in any case which did not fall within their definition of "poverty." The legislature has imposed what is practically a new duty upon the profession and, according to its wont in such cases, appears to have forgotten that the labourer is worthy of his hire.

A PIONEER MEDICAL MOUNTAINEER.

AMONG the humanists of the beginning of the sixteenth century Conrad Gesner holds no inconsiderable position. At once physician, philologist, botanist, and zoologist, he was original in whatever department of knowledge he undertook to study. His admirers have called him the "German Pliny," but he may be more truly compared to Linnæus, for Switzerland owes the same kind of debt to Gesner of Zürich as Sweden to its famous naturalist. Apart from their magnificent illustrations and evidences of original research, Gesners' works are interesting for a certain freshness of point of view. He is one of the first, for instance, to write in praise of mountaineering as an amusement and he describes the Alpine world with such enthusiasm as completely to refute the critical dictum that love of scenery is quite modern. His tractate "De Montium Admirationes" is in the form of a letter, prefixed to a *libellus* on milk and milk products ("De lacte et operibus lactariis"). The date is 1541, an age at which no other Europeans, except perhaps the Welsh, had an eye for forest and mountain beauties. "I early determined," he says, "to climb one or more mountains every year as long as Heaven should grant me life." And these climbs were to take place in spring when the plants are in their vigour, partly for the sake of botanical study and partly for exercise and mental delectation. It is delightful, he says, to contemplate the enormous size (*moles*) of mountains, and he likens to pigs the individuals who never raise their eyes to the stars. His pedestrian tours, so fruitful in scientific results, might put the most timid mountaineer in countenance. His only climb of any importance was the ascent of the St. Gothard, but he slowly explored (*perreptavit*) what was then practically unknown Switzerland. The great climbs were untried until the age of De Saussure.

A WARNING TO QUACKS.

AN action recently tried at Manchester assizes may be commended to the serious attention of all persons who, without qualification to do so, undertake the treatment of disease, and of those unqualified persons in particular whose financial position makes them, to use an expression familiar to lawyers, "worth powder and shot." The plaintiff was a married woman, named Johnson, the wife of a weaver at Darwen, and the defendant, who has no qualifications to practise medicine, carries on business at Pendleton, Blackburn, Darwen, and elsewhere in Lancashire under the name of Dr. Hall's Hygienic Company. In August, 1906, the plaintiff had noticed a small lump or swelling in one of her breasts and she consulted the defendant who had before treated her for indigestion and had since plied her with his pamphlets and advertisements. He professed his ability to cure her breast and during treatment, which lasted for more than a year, assured her that she was not suffering from cancer which she suspected and dreaded. His treatment included fomentations, ointment, baths, and herbal concoctions, and his scientific attainments and methods of persuasion may be judged by an extract from one of his letters written to her when she was rapidly and evidently growing worse: "Since seeing you last Friday we have thought about your case. We are very pleased to know of the improvement which has taken place in your general health. This would have a tendency to draw the diseased condition from your body into the breast and throw it out, so that the main disease would be practically in the breast itself instead of scattered all over the body." In September, 1907, the plaintiff's condition and sufferings were such that she could persevere no longer and she consulted Dr. J. T. Ballantyne who diagnosed cancer, formed the opinion that an immediate operation would be her only chance, and excised the breast on the following day. It was, however, too late for any kind of remedial measures to be possible, and at the trial of the action the poor woman entered the witness-box as one beyond hope of recovery and apparently with but a short time to live. Her claim was made against the defendant upon the ground that by his false representations as to his ability to effect a cure

she had been prevented by him from consulting a qualified surgeon, with the result that she had had to undergo a painful operation without any prospect of a permanent cure. Evidence on her behalf was given by Dr. Ballantyne who described her condition when she came to him and what he had done, and by Mr. Thorburn who had seen the patient recently and corroborated the evidence of Dr. Ballantyne, expressing the opinion that in the autumn of 1906 at an early stage of the disease (so far as he could judge from the materials before him) operation would have been of great service. Both these gentlemen testified to the absolute uselessness of the procedure adopted by the defendant. For the defence Dr. John Shaw gave evidence to the effect that in his opinion operation for cancer of the breast was useless and could not in any circumstances have cured it in the plaintiff or prolonged her life, but that non-surgical treatment properly directed and applied might have proved beneficial, that of the defendant being palliative only and incapable of effecting a cure. Mr. Justice Pickford in summing up instructed the jury that a man though not medically qualified might undertake to cure disease, but that if he held himself out to be qualified he laid himself open to prosecution and that if he undertook to cure disease he was bound to use reasonable and proper skill. With regard to Dr. Shaw's admission that the treatment applied by the defendant was not a right way to treat cancer, the learned judge pointed out that that was not enough but that the jury should also be satisfied that it was negligent treatment. He suggested to them that the defendant's dilemma must be that either he was so ignorant that he could not tell whether his patient suffered from cancer or not, in which case his pamphlets and advertisements were fraudulent, or he knew it was a case of cancer and yet for the sake of gain continued to pretend to treat it. As a result the jury after a brief consultation found a verdict for the plaintiff, awarding her £600 damages.

THE CASE FOR THE GOAT.

WE have received and have read with interest a little book[1] by an anonymous author, in which, with the dedication "Ad Amicos Vaccæ Pauperis," he pleads strongly for the more extended recognition of the value of the goat to the community largely on the ground of the quality and purity of the milk which she produces. The book is a little guide to goat-keeping and shows how easily anybody with no more accommodation than a back-yard in the suburbs can become a keeper of live stock which will make him independent of the dairyman, provided that he adheres to a few essential canons of goat-keeping. "Home Counties" strongly advocates the animal as a profitable investment for agriculturists on small holdings and suggests as an alternative for an ancient political motto "Three Acres and Goats" on the ground that the capital locked up in each of these animals is less than is required for the possession of the classical cow. That goat's milk is rich in butter-fat is known to most people and is well supported by various analyses quoted in this book, though we should like the authority for the comparative analysis on page 11 in which "the cow's milk from the winner of the champion milking prize at the dairy show" has no protein constituent credited to it. Variable as are the analyses of casein in cow's milk we can hardly accept this statement without challenge. Be that as it may, there is no doubt that goat's milk is notably rich both in proteid and fat and that many children have thriven on it who have done very poorly on the product of the larger animal. Another great point in her favour is that the goat is a much more cleanly animal than the cow and that there is less chance of her milk being contaminated by manure. The fact that will surprise most readers, however, is the daily yield of a good milch-nanny. Something over a quart a day may be expected from a quite ordinary animal and there is a photograph in the book of a "three-quarters Toggenburg" that is described as having given half a ton of milk in the year. By careful management a very small flock will give an all-the-year-round supply. Another interesting picture is that of a French infant taking his or her nourishment in the heroic fashion of the fabled founder of Rome: we are bound to say that this method jars upon English prejudices, although, if the udder be well washed, the milk supplied *per vias naturales* must be free from bacterial dangers. In any case tuberculosis seems to be nearly unknown amongst English-bred goats, although their sisters of Malta are notoriously associated with the fever which takes its name from that island. We are more concerned with the hygienic than with the economic aspect of goat-keeping, but we may say that a good case is made out for the financial advantage of careful goat farming, even on the smallest scale. Much dissatisfaction is expressed by the author and many of the 24 goat-keepers who have contributed an appendix to the book with the prohibition which the Board of Agriculture has placed on the import of goats, even for stud purposes. It is claimed that the strain is seriously deprecciated in this country by the continual in-breeding caused by this order and that English stock could be equally well protected from epizootic disease by a system of quarantine. The mischievous propensities of the species are not glossed over but the author thinks that they are outweighed. His enthusiasm, which is evidently born of thorough knowledge, even carries him to a little appendix upon sheep-keeping for milch purposes but we fancy that goats must rise considerably in the public estimation before the claims of their innocent cousins are considered seriously in this respect.

[1] The Case for the Goat, with the Practical Experience of 24 Experts, by "Home Counties," Member of the British Goat Society. London: George Routledge and Sons; New York: E. P. Dutton and Co. Pp. 162. Illustrated. Price 3s. 6d.

THE THERAPEUTIC ACTION OF CHLORIDE OF ANTIMONY.

A SOLUTION of chloride of antimony was formerly official in the British Pharmacopœia but it fell into disuse until within the last few years when Unna strongly recommended it as a remedy in lupus. As a result the attention of other dermatologists has been called to this preparation and it seems probable that it is coming once more into general use. In these circumstances it is of interest to refer to a paper by Dr. A. Minto McDonald and Mr. J. Rutherford Hill in the *Pharmaceutical Journal* of Jan. 25th, in which the therapeutic action of solid chloride of antimony is carefully distinguished from that of the solution. The former is also known as butter of antimony and has been confused with the solution by many medical writers. The solution contains about 30 per cent. of chloride of antimony and 16 per cent. of free hydrochloric acid. It usually contains, in addition, varying quantities of ferric chloride but this impurity should not be permitted. The solid substance is strongly caustic and escharotic owing to its affinity for water. When kept in contact with the skin for a time it is decomposed with the production of hydrochloric acid and antimony oxychloride. This action takes place immediately when the drug is applied to an ulcer or when the skin is broken. In the case of the solution there is no such strongly caustic or escharotic effect unless the solution is continuously applied. The hands may be washed in the solution and allowed to dry without the production of more than a slight and temporary smarting or itching, the skin and hairs being quite unaffected. According to Unna the solution has a selective affinity for the tuberculous nodules in lupus, causing them to disappear. Dr. McDonald and Mr. Hill found that the action of the solution on the hands is practically identical with that of a solution containing

16 grammes of hydrochloric acid diluted with water to 100 cubic centimetres. While the solution has little or no action on healthy skin it frequently exerts a beneficial action on inflamed skin and in certain skin diseases it may be of absolute service. It was found in a case of psoriasis that the application of solid antimony chloride by means of a glass rod checked the inflammation without causing the formation of a scab. In two cases of lupus of the face the normal skin was not attacked by the solution, while the diseased parts were beneficially affected.

THE PLAGUE ON THE GOLD COAST.

DURING the week ended Feb. 22nd the Acting Governor of the Gold Coast has reported 11 deaths from bubonic plague at Accra and that deaths have occurred from pneumonic plague at Nianyano. With the exception of one case of bubonic plague at Brewa no cases are reported from any other place in the colony.

THE GORE BROOK.

A MANCHESTER correspondent writes: "The Gore Brook, like most water-courses in the neighbourhood of towns, instead of adding to the beauty and increasing the attraction of the district through which it takes its course, has been for years a mockery and byword as the possessor and diffuser of the strongest and foulest stink, or odour if preferred, to be found in the neighbourhood of Manchester. Now, however, there is said to be more hope of cleansing it than there has been for years past. The Mersey and Irwell joint committee has decided to request the district councils of Audenshaw, Droylsden, and Gorton to have the houses within their districts which now drain into the brook connected with the sewerage system. The cleansing of the brook will be looked forward to with interest by the numerous sufferers from its present noxious and disgraceful condition and the only wonder is that the nuisance should have been allowed to flourish so long."

RATS AND THE PUBLIC HEALTH.

THE report of the Public Health and Marine Hospital Service of the United States for Jan. 31st last shows that the sanitary authorities on the other side of the Atlantic have acted up to the American reputation for promptitude in the adoption of any new method of proved value. The rat examinations, including the laborious "flea censuses," that is the combing-out and counting of the fleas from previously chloroformed rats, are being pursued vigorously in San Francisco, the city which feels especial anxiety regarding plague on account of its floating cosmopolitan population. During one week its "rat crusade" statistics are given as follows: Rats found dead, 268; rats trapped, 4022; rats identified, 2359, of which 2154 were of the Mus decumanus species; 1371 rats were examined bacteriologically and 19 of them were found to be infested with bacillus pestis; 374,011 poisons were placed but no mention is made of any bacteriological method of attack. Similar measures were taken at Oakland, Point Richmond, and Emeryville, California. The health officer, Passed Assistant-Surgeon Blue, reports that plague is practically at a standstill, no case having occurred since Dec. 20th in San Francisco. The percentage of plague-infected rats is slightly on the decrease, being at present about 0·7 per cent. of the number examined, but the rat cases are still widely distributed over most of the districts. In one district the flea census of all live rats caught showed only one flea in 20 rats, and two fleas in another batch of eight rats. The prolonged enzooticity of the disease amongst the rats in districts liable to plague amongst men seems now to be a well assured fact, after the authoritative pronouncements that have come from both India and Australia on the matter, and the San Francisco sanitarians will not rest easy until even this small percentage of infected animals ceases to be found. They are taking stringent precautions to render buildings and stables rat proof, and the use of metal garbage cans has been rightly ordered. It need hardly be said that Europe is deeply concerned in the keeping of plague out of America in these days of speedy and easy transatlantic communication, and it is gratifying to learn that the splendid research of the working commission on plague in India is bearing such useful fruit in another country.

SEXUAL HYPOCHONDRIASIS.

To the January number of the *Liverpool Medico-Chirurgical Journal* Mr. Frederick W. Lowndes has contributed an interesting article on sexual hypochondriasis. He deals first with syphiliphobia and shows that some of those who imagine that they are afflicted with syphilis are medical men who have for many years seen much of syphilis. It is almost impossible in many cases to convince them that they are wrong. Mr. Lowndes also discusses the question of the marriage of those who have suffered from syphilis and he lays down the rule that proper treatment continued until perfect recovery has followed must have been employed and that a sufficiently long interval must have elapsed since the last appearance of any symptoms of constitutional syphilis, but he does not tell us what length of time is meant by a "sufficiently long interval." All interested in the subject would have liked to have the benefit of his opinion on this important matter, an opinion founded, as it would be, on an exceptionally long experience of syphilitic disease.

SANATORIUM FOR CHILDREN THREATENED WITH CONSUMPTION.

IT is gratifying to notice the increasing attention which is being given to matters connected with the health of the children of the poorer sections of the community. The diminished birth-rate and the appalling mortality which occurs among the infants and young children of the poor are at last attracting the notice of statesmen and philanthropists in this country as they have done for many years past in France. Large numbers of sanatoriums set apart for the reception of children have been erected round the coast of France and a most careful selection of cases is made so as to avoid sending early and advanced cases to the same institutions. A certain number of these sanatoriums are set apart for what the French authorities term "les enfants prétuberculeux." Within this expressive category are included delicate children of tuberculous inheritance and probably also many cases of doubtful nature, including early cases of tuberculous disease with insufficient signs to enable the diagnosis to be established. The results obtained at such institutions appear to be most encouraging. In Germany also highly gratifying results have been obtained by open-air sanatoriums and forest schools for children. An influential meeting was held at the Mansion House on Feb. 19th, the Lord Mayor of London, Sir John Bell, occupying the chair, in aid of a sanatorium for children threatened with consumption which it is proposed to establish in connexion with the Children's Home and Orphanage, Bonner-road, N.E. The Rev. Dr. Gregory, principal of the institution, explained the objects of the proposed sanatorium which is intended in the first place for members of their own home and orphanage who are in need of special treatment, especially those who are threatened with consumption. He appealed for contributions towards an establishment fund for which 10,000 guineas were necessary. Sir R. Douglas Powell, the President of the Royal College of Physicians of London, in supporting the appeal, referred to the good work that the Children's Home and Orphanage were carrying on. He

understood that they had charge of 2000 children who, owing to loss of parents, carelessness of guardianship, poverty, or other circumstances, were handicapped for the battle of life. He thought it greatly to the credit of the institution that, bearing in mind the source whence those received into its home were derived, 90 per cent. of them were sent into the world able to perform useful work and to become good citizens. It was for the remaining 10 per cent., received into the institution definitely diseased, many of them with tuberculosis, that the proposed sanatorium was needed. He also stated that for the past 50 years the mortality among children born in England and Wales had been such that about 15 per cent. died in the first year of life and maintained that just as on the battlefield one death meant many wounded, so in the campaign of life the sacrifice of 15 per cent. of those born meant the disablement of a very much larger percentage for the battle of life. Sir Thomas Barlow also spoke in support of the proposed institution which he said was on the right lines. He referred to the excellent results obtained in Germany by similar measures with the class of children that this institution was dealing with, and also to the results of an experiment of a similar nature carried out last summer by the education committee of the London County Council which he hoped to see continued. At the out-patient department of any metropolitan children's hospital large numbers of children may be seen of delicate appearance, obviously out of health, suffering from conditions which are well expressed by the convenient though perhaps unscientific term—pretuberculous—used by the French authorities. That excellent results may be obtained with such children there exist abundant proofs and we are entirely in sympathy with any movement which has for its object the placing of such children under favourable conditions for regaining their health and for either curing or averting serious disease.

TOXIC EFFECTS OF PETROL FUMES.

A CASE of considerable interest is recorded by Sir William R. Gowers in the current number of the *Review of Neurology and Psychiatry* under the heading of Pseudo-myasthenia of Toxic Origin (Petrol Fumes). The patient was an officer in the army, engaged in a Government factory superintending the construction and testing of petrol engines. The latter process was conducted in a closed shed, where the patient was continually exposed to the fumes of burned petrol, and not infrequently no doubt to the products of its incomplete combustion. There was nothing worthy of note in his previous history which was indeed mainly negative. His first symptom appeared about six months before he was seen by Sir William Gowers. This was a peculiar perversion of the sense of taste, all sweet things possessing for him a salt taste. This was only temporary but was followed by a tight feeling in the throat when swallowing which increased, and about six weeks before coming under observation this feeling was associated with a definite difficulty in swallowing anything except certain bland fluids. There was also difficulty in mastication but there was no regurgitation of fluids through the nose. The voice was not nasal in character but soon developed peculiar myasthenic characters, being good, with clear articulation at first, but rapidly becoming feeble with imperfect articulation if talking were prolonged, so that after three or four minutes speech would become unintelligible. The contractions of the orbiculares palpebrarum muscles were very weak and there was but little outward movement of the mouth on smiling. The electrical reactions appeared to be normal as also did sensation. The reflexes were of normal character and the knee-jerks did not show the myasthenic character. There were practically no other symptoms except peculiar attacks of pain in the chest. The case is noteworthy not only from the striking similarity which the symptoms present to those of myasthenia gravis in so far as they affect the region of the bulbar nerves but also from the apparent cause. The actual etiology of myasthenia gravis is still obscure, and although a toxic origin, either endogenous or exogenous, has been suggested for it no actual proof of this exists. In the present case the onset and rapid development suggested to Sir William Gowers the possibility of a toxic cause, and the only possible source discoverable was the exposure to the fumes of burned petrol. This view received considerable support from the subsequent course of the case. The treatment adopted was the administration of $\frac{1}{75}$th grain of nitrate of strychnine hypodermically twice a day. After a week there was distinct improvement, which was steadily maintained, so that after an interval of some months the patient was enabled to resume his work. Just a year after he was first seen he was again taken to Sir William Gowers with a return of his previous symptoms except that there was now no difficulty in swallowing. It was found on inquiry that he had returned to work of similar nature, involving exposure to petrol fumes. He was again treated with strychnine and advised permanently to give up the work which he had been doing, after which he rapidly recovered. Sir William Gowers states that he has published his case, which he describes as mysterious, in the hope of eliciting the experience of others, as he was only able to find in the literature one other case relating to the toxic effects of petrol fumes. He also points out that but little is known of the products of its incomplete combustion. The widespread and increasing use of petrol renders the matter one of timely interest and of considerable practical importance from a medical and a medico-legal point of view, and it is much to be hoped that the interesting paper to which we have referred may lead to an increase of our knowledge in this connexion.

THE "SWEATING SYSTEM" IN PARIS.

THE French Governmental Labour Bureau, known as L'Office du Travail, has recently published a very interesting report on home work (*travail à domicile*). This gives a vivid insight of the sweating system as it affects working women in Paris. The story is the same as that which has been told so often in England. It is those who work isolated in the privacy of their own homes who are the worst paid and it is the women who are the greatest sufferers. Thus in work connected with linen and underclothing there are employed in Paris 22,975 persons, of whom only 1478 are men. Nearly all the men are employed in factories or workshops, only 57 work at home, but 11,141 women come under the heading of home-workers. Wages have been steadily decreasing. The pay for working turn-down collars has fallen from 8*d.* to 6*d.* per dozen and the pay for collar button-holes has fallen from 3½*d.* to 2½*d.* per dozen. Of the women workers, with whom the report deals, 43 per cent. worked, in normal seasons, less than 10 hours per day; 43 per cent. worked from 10 to 12 hours per day; and 13 per cent. more than 12 hours per day. But when there is special pressure the work is not infrequently prolonged to 18 and even 20 hours per day. It is needless to remark how injuries such excessive toil must be. The law in England limits the hours of labour for women and in France the limit is imposed on men as well as on women. But in neither country has any attempt been made to enforce such limitations on those who work in the privacy of their own homes. As for the wages paid in Paris, out of a group of 217 workwomen examined 85 per cent. earned less than 2½*d.* per hour (26 centimes); 50 per cent. earned less than 1½*d.* (16 centimes); and of those occupied in preparing household linen 43 per cent. received less than 1*d.* per hour. On questioning 366 workwomen engaged on different specialities

of underwear it was found that three-fifths earned less than £16 a year. With regard to those women engaged in the same sort of occupation but in their own private rooms and not in workshops 57 per cent. earned from £12 to £24 per annum. Then, to these figures must be added the fact that in Paris groceries are some 30 per cent. dearer than in London; meat and rents are also dearer. In such circumstances, some more or less limited form of prostitution, with its attendant risk of disease, too often supplements these insufficient earnings. When this is not the case extreme poverty causes much disease. The reporters of L'Office du Travail examined 500 tenements of home-workers. Of these, 135 consisted of one single room and 61 of these rooms only measured 30 cubic metres. The rents paid varied from £6 to £12 per annum and 32 per cent. of the lodgings inspected are described as veritable fever dens. Yet it is in such places that some of the most beautiful and luxurious underlinen is made. Undoubtedly it would be much safer for the consumer as well as the worker if such home work was prohibited. Miss Clementine Black, who is an authority on these subjects, recently delivered a lecture at Leicester on the sweating system and mentioned the case of an excellent needleworker who had made undergarments for a princess and yet only earned 2*d*. per hour. Presumably, if the Bill now before the House of Commons became law such very low wages would no longer be tolerated. Yet if the wages were increased 100 per cent. this would not insure that work done at home would be done under wholesome conditions. It is not always in the poorest places or among the worst paid workers that articles of clothing are contaminated by contact with cases of infectious disease. Nor would some increase in the rate of wages prevent pressure causing an unhealthy prolongation of the hours of work. All these evils can only be removed where all privacy is abolished and sanitary or factory inspectors are given the right of entry at all times of the day. Where work is done for the public, where clothes are made that the public have to wear, there the public, represented by the sanitary authority, should exercise full control.

THE FUNCTION OF THE PARATHYROID GLANDS.

IN the January number of the *Quarterly Journal of Medicine* Dr. David Forsyth has published a very interesting paper on the Function of the Parathyroid Glands. These small bodies were first described by Sandström in 1880 and he considered them to be mere embryonic rests of thyroid tissue. In 1891 Gley tried the effect of removal and from the serious results produced he was led to ascribe to them an immense importance. Several subsequent observers supported his views, and in spite of a few doubts raised by Vincent and Jolly and by Richardson it was generally held that the parathyroids were glands the function of which was essential to life, their removal leading to death in a few days. Dr. Forsyth planned a series of experiments on animals for the purpose of obtaining data free from some possible fallacies present in those already performed, but the experiments had to be abandoned as it was found impossible to avoid the objections raised, for the parathyroids were so inconstant in position and size that it was never possible to be certain that all had been removed and if pains were taken to remove as much as possible the thyroid was liable to be injured severely. He therefore resolved to undertake two researches: one was the detailed examination of the glands in man and the other an investigation of the comparative anatomy, gross and minute, of the thyroid and parathyroid glands in a large number of mammals and birds. Dr. Forsyth points out that from an evolutionary point of view the importance of the function of an organ depends on the duration of its existence and the longer a viscus has been established the fewer are its anatomical variations. Judged by this standard the parathyroids are recent and unimportant organs, for they vary enormously in size and position. Observations on the gross anatomical features of the parathyroids suggest that they are related to the thyroid gland. The parathyroids in human beings are most numerous in or near the thyroid, especially where the shape of the thyroid is subject to irregularities and elevations—that is to say, near the entrance of the inferior thyroid artery, and in this situation accessory thyroids are also especially common. The interstitial cells of the thyroid often possess the histological characters of the parathyroids and yet they may take on the action of thyroid cells for they are not rarely active, as is shown by the presence of oxyphile granules in their protoplasm and of granular secretion and drops of colloid between the cells. In the parathyroids also similar changes are usually seen, protoplasm filled with oxyphile granules, granular secretion, or drops of colloid between the cells. The quantity of secretion may be plentiful enough to force apart the surrounding cells and to form a small vesicle. For all these reasons Dr. Forsyth comes to the conclusion that the parathyroid glands are not merely embryonic but that they generally show definite signs of cellular activity. He considers that they are really portions of the thyroid gland which have assumed functional activity but have not yet formed vesicles. The parathyroids are glands essentially thyroidal in nature, possessing no peculiar function but are engaged in the active secretion of the same substance as the thyroid gland.

INTERNATIONAL CONGRESS ON TUBERCULOSIS.

AT a meeting, held at 20, Hanover-square, London, on Feb. 8th, of those interested in the formation of the general committee for Great Britain and Ireland of the International Congress on Tuberculosis, convened for Washington next September, it was decided to form an executive committee consisting of 25 members representing different parts of the kingdom, to be selected so far as possible from those who proposed to attend the Congress. Of these members six were to be chosen from London, nine from the provinces, five from Scotland, four from Ireland, and one from Wales. This Congress promises to be one of great interest and importance and although the committee has been somewhat tardy in getting to work it is to be hoped that Great Britain and Ireland will be well represented. A great deal of work has been done in this country and if those who are interested in tuberculosis are able to visit Washington Great Britain's contribution should be an important one, whilst those who are able to attend should bring back with them information of great value to the country in the present state of public opinion in regard to legislation on tuberculosis. It seems to be highly desirable that not merely the clinical and scientific aspect of tuberculosis should be well represented but that municipal and government officials should, if possible, give the country the benefit of their experience at Washington.

THE ACTION OF PREPARATIONS OF IRON UPON THE TEETH.

IN a recent number of the *Therapeutische Monatshefte* Dr. Morgenstern describes the results of a series of experiments, extending over a period of from two to four months, on the action of various medicinal preparations of iron upon the teeth. Thin sections of the teeth of man, the ox, and the calf were immersed in solutions of various salts of iron and ferruginous waters and examined microscopically at regular intervals. The results show that reduced iron, saccharated solution of iron, and solution of albuminate of iron exert no deleterious effects whatever and in this respect stand in a class by themselves. The citrate of iron has a slight action, while the sulphate, lactate, and pyrophosphate of iron induce a partial decalcification and a pronounced blackening of the teeth. Ferrous iodide

and ferrous chloride are the most injurious preparations of iron, 10 per cent. solutions of these salts removing the enamel in a few days. As regards ferruginous mineral waters the injurious action on the teeth is due not merely to the proportion of iron present but more particularly to the presence of earthy salts which tend to increase the corrosive action of iron. When iron is administered it reappears in the form of an albuminate which is incapable of harming the teeth. Dr. Morgenstern's results serve to emphasise the necessity of advising patients to take most preparations of iron through a glass tube.

REVIVAL OF PLAGUE IN JEDDAH.

THE British Delegate on the Constantinople Board of Health announces that a small outbreak of plague, the third within less than two years, is now running its course in Jeddah. The first of these outbreaks, it will be recalled, lasted from May 29th to July 27th, 1906; during those two months 72 cases, all fatal, were recorded. The second was longer and more severe. It began on Jan. 8th, 1907, and lasted until May 30th and in that period 365 cases with 354 deaths were registered. The present revival of the disease there began on Jan. 14th of this year, when a single case was observed in a native inhabitant of the town. Between Jan. 14th and 19th 6 cases with 5 deaths had been recorded; between Jan. 20th and 26th there were 7 cases with 6 deaths; between Jan. 27th and Feb. 2nd 6 cases and six deaths; and between Feb. 3rd and 8th 7 cases and 7 deaths. The totals down to the last-named date had therefore been 26 cases and 24 deaths. The British Delegate's communication, which is dated Feb. 15th, says that by consular reports received from Jeddah it appears that (at any rate, until Jan. 30th) the disease had not attacked any of the pilgrims returning from Mecca but had been confined to local negroes and Hadramutis who are mostly occupied as porters of heavy goods. One pilgrim, however, suffering from plague has been landed from a pilgrim ship at the lazaret of El Tor, and he had no doubt contracted the infection in Jeddah.

PROTAGON.

CONSIDERABLE discussion has been devoted to the question of the relationship of lecithin to protagon. Some have denied that protagon has a separate existence or is a substance of constant composition, but there seems to be little doubt that protagon is a brain substance containing the elements carbon, hydrogen, nitrogen, and phosphorus united to form a chemical individuality. In the first number of the new magazine which has just appeared and which has for its title the *Quarterly Journal of Experimental Physiology*, an interesting paper on Protagon is contributed from the physiological laboratory of the University of Edinburgh by Mr. R. A. Wilson and Mr. W. Cramer. These investigators conclude that (1) protagon is a substance of a definite chemical composition, retaining this composition after repeated recrystallisation; (2) that it is a substance with definite and constant physical properties and the specific rotary power and the refractive indexes have been determined; (3) that protagon is identified by its chemical composition and by its physical constants; (4) that there is no evidence for the view that protagon is a mixture of cerebrosides and phosphatids; and (5) the constancy of the physical and chemical properties of protagon supports the view that it is a definite compound. It appears that the substances isolated from protagon after prolonged treatment with warm alcohol and formerly held to exist as such in the mixture (protagon) must now be considered to be the constituents of the protagon molecule. They are, in fact, the intermediate decomposition products of protagon. In this interesting paper details are given of a method for the preparation of protagon, contact with warm alcohol being avoided as much as possible.

THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH, NEW YORK.

THE Rockefeller Institute for Medical Research proposes to award for the year 1908–09 a limited number of scholarships and fellowships for work to be carried on in the laboratories of the institute in New York City, under the following conditions: The scholarships and fellowships will be granted to assist investigations in experimental pathology, bacteriology, medical zoology, physiology and pharmacology, physiological and pathological chemistry, and experimental surgery. They are open to men and women who are properly qualified to undertake research work in any of the above-mentioned subjects and are granted for one year. The value of these scholarships and fellowships ranges from $800 to $1200 each. It is expected that holders of the scholarships and fellowships will devote their entire time to research. Applications, accompanied by proper credentials, should be in the hands of Dr. L. Emmett Holt, the Secretary of the Rockefeller Institute, at 14, West 55th Street, New York City, not later than April 1st, 1908. The announcement of the appointments will be made about May 15th and the term of service will begin on Oct. 1st but by special arrangement it may be begun at another time.

FOUR lectures, free to the public, will be delivered at Gresham College, Basinghall-street, London, each evening at 6 P.M., on March 2nd, 3rd, 5th, and 6th, by Dr. F. M. Sandwith, Gresham professor of physic. Lecture I. will review the Gresham professors of physic from Henry Gwinne (1597–1607) to H. E. Symes-Thompson (1867–1906). Lecture II. will discuss tuberculosis and its history from Hippocrates to Koch, its geographical distribution and various names, and its manner of spreading. Lecture III. will consider pulmonary tuberculosis, its prevention, its symptoms and diagnosis. Lecture IV. will explain the treatment in sanatoriums.

THE death was announced this week of His Excellency Dr. Johannes Augustus von Esmarch who is best known in this country by the elastic bandage which bears his name. He has been for 50 years professor of surgery in the University of Kiel, a post which he largely owed to his eminence as a military surgeon in his early days. He was in his eighty-sixth year.

CHARGE AGAINST MR. A. Q. TUCKER UNDER THE PHARMACY ACT.

BEFORE Mr. Francis at the Lambeth police court on Feb. 24th, at the instance of the Pharmaceutical Society of Great Britain, Mr. A. Q. Tucker, the agent for Dr. Tucker's asthma specific, was fined £5, with 5 guineas costs, for contravening Section 17 of the Sale of Poisons and Pharmacy Amendment Act, 1852. Mr. Glyn-Jones appeared for the complainant and Mr. F. E. Smith, K.C., M.P., and Mr. J. Wylie for the defendant.

In opening the case, Mr. GLYN-JONES said that under Section 17 of the Act in question it was unlawful to sell any poison either by wholesale or retail unless the box, bottle, vessel, wrapper, or cover in which such poison is contained were distinctly labelled with the name of the article and the word "poison," and with the name and address of the seller of the poison. It was also unlawful to sell any poison of those included in the first part of the schedule to the Act. The defendant carried on business at Herne Hill, principally through the post, and had a very large sale for the specific in question, which he supplied in a bottle for use as a spray. On Jan. 22nd, on behalf of the Pharmaceutical Society, a Mr. Waldock went to Mr. Tucker's house at Herne Hill and asked for some of his specific. Without any question being asked at all as to who he was the defendant supplied him with a case of the specific, which counsel handed to his worship, and said he (Mr. Francis) would see that the case

bore no label other than the patent-medicine stamp. There were words embossed on the lid, but these bore reference to the case and not to the contents. The bottle bore the words, embossed on the glass, "Nathan Tucker, M.D., Specific for Asthma, Hay Fever and all Catarrhal Diseases of the Respiratory Organs." An analysis of the contents showed that it contained two scheduled poisons, 3·6 grains of cocaine and 0·91 grain of atropine. He (counsel) proposed to call evidence to show that these poisons were extremely dangerous and that the article sold in the way in which the defendant sold it was dangerous.

Mr. WALDOCK, examined by Mr. GLYN-JONES, said that when he went to Mr. Tucker's house he asked for Mr. Tucker and made a request for a bottle of his asthma specific. Mr. Tucker asked him whether he wanted a 1 or 2 ounce bottle and he bought a 1-ounce bottle.

Cross-examined by Mr. SMITH: Mr. Tucker did not ask him whether he was a user of the treatment.

Re-examined by Mr. GLYN-JONES: On Jan. 25th he handed the bottle to Mr. Moon of the Pharmaceutical Society.

Mr. MOON, in the box, said that he instructed the last witness to make the purchase and sent the bottle for analysis to Mr. Thomas Tickle.

Mr. TICKLE public analyst for Exeter, said that he received the bottle on Jan. 30th and found that it contained cocaine and atropine. The total amount of cocaine was 3·6 grains and of atropine 0·91 grain. Cocaine and atropine were vegetable alkaloid poisons.

Cross-examined: He was not present in court during the hearing of the action for libel brought by the defendant against THE LANCET. He knew the use of the specific by the words on the bottle. There were 437½ grains in an ounce, so that the proportion of cocaine to the ounce would be about 3 to 437.

Mr. P. L. DANIEL, senior surgeon to the Metropolitan Hospital and assistant surgeon to Charing Cross Hospital, agreed with the last witness that the poisons were vegetable alkaloids. Both were equally virulent poisons and might cause death. Death would probably result if the contents of the bottle were swallowed. The maximum dose of atropine was $\frac{1}{100}$th of a grain. Cocaine was rarely given internally. The maximum dose was put down at half a grain. Cocaine was uncertain in its action, which depended upon personal idiosyncrasy. It was an insidious poison leading to the cocaine habit. The fact that the poison contained in the bottle had been diluted with some 400 parts of other fluids would not materially minimise the danger. There would be a remote danger of poison if the stuff was used as a spray.

Cross-examined: He was not present at THE LANCET trial. He was not aware of any case where a drug supplied with an inhaler had been drunk. He agreed that probably $\frac{1}{10000}$th part of a grain would be used in each squeeze of the inhaler. It would take 100 squeezes of the inhaler to take up one drop of the stuff probably.

Re-examined, the witness said that it would be dangerous to leave such a bottle about without any label or printed directions.

Mr. SMITH, on behalf of the defendant, quoted the case of the Pharmaceutical Society against Delve reported in 1893, 1 Q B. 71.

The MAGISTRATE pointed out that there was another case—the case of Armson—which had a more important bearing upon the case.

Mr. SMITH said that if there had been any breach of the section of the Act it was only a technical one. Mr. Tucker always sent out his bottles with instructions that the contents should be used with an inhaler. Until quite recently Mr. Tucker was totally unaware of the ingredients of the specific, which represented an extremely valuable secret belonging to Dr. Tucker, an American physician. Mr. Tucker was Dr. Tucker's brother and acted as Dr. Tucker's agent.

Mr. TUCKER was then called as a witness and said that he had been selling his brother's specific for some time in this country. Until the recent libel action against THE LANCET he was not acquainted with the ingredients of the specific. When Mr. Waldock purchased the bottle from him he was under the impression that he was one of "our patients." He issued full instructions for the use of the drug with the atomiser. In cross-examination he said that he had no medical qualifications.

Mr. FRANCIS said he thought that there was no need to prolong the case. There had been a flagrant breach of an Act of Parliament and the defendant must pay the penalty of £5 with 5 guineas costs.

SANITARY REFORM IN INDIA.

II.[1]—THE JAILS.

THE sanitary administration of a huge country such as our Eastern dependency must necessarily be a matter of enormous magnitude, whether considered in the light of the actual labour incurred, or of the vast interests implicated therein, or of the manifold subjects involved. Amongst the last we need only mention the questions connected with the management of the various jails and lunatic asylums, the work of the various health officers, plague administration, and vaccination, to show how much is included under the term "Sanitary Administration of India." As we announced in a leading article last week, we propose to publish from time to time articles reviewing this great work, compiled from the reports of the various sanitary departments, and in this article we will consider the work that has been carried on by the jails for the year 1906.

Bengal.

The administration report on the jails of Bengal appeared from the able pen of Major W. J. Buchanan, I.M.S., the Inspector-General of Prisons, Bengal. This officer at the commencement of his report contrasts the English prison system with that of the Indian. During his leave on special duty to England he took the opportunity of visiting several of the important prisons at home—viz., Wormwood Scrubs, Parkhurst, and the juvenile prison at Borstal. As the result of his investigations he does not consider that the Indian administrator has much to learn from the ordinary prisons in England, except in one particular: under the English prison system the prisoners after release are not lost sight of. Agencies, religious and purely non-official, exert their beneficent influence in this respect, with the result that many casual offenders are taken up, provided with work, and sent to other parts of the country, and so saved from joining the ranks of the habitual criminal class. Major Buchanan, recognising the value of this special work, has made a start in this direction in Calcutta. One great reform we note that this officer has urged and is still urging, and that is that the Government should provide a juvenile jail for Bengal, and for this purpose he suggests that the present Alipore Reformatory should be restored to the Jail Department and converted into a juvenile jail. As a reformatory it is out of date and managed in entire opposition to the system that is working so successfully in England. Major Buchanan urges the Government to return the small jail at Alipore, now doing duty for a reformatory in Calcutta, to the Jail Department, when as a juvenile jail for lads from 16 to 23 years of age it might at once be started. Herein modern trades, even jute spinning and weaving, might be taught, and subsequently employment for such youths would not be difficult to obtain in the neighbourhood of Calcutta. Under the present system youths often get very short sentences which are repeated more than once during the same year and the boys are thus manufactured into criminals, whereas Major Buchanan would advocate sufficiently long sentences so that the boys could be taken in hand, taught trades, and found work on their release. We think that this common-sense reform is eminently desirable and trust that the Government will fall in with the wise and humane views of this able administrator.

The judicial statistics exhibit many interesting points. As compared with the previous year the figures show an increase, excepting only in the case of females remaining on the last day of the previous year which show a small reduction of 23. The high prices of food, grain, and other necessaries of life probably drove many to crime and thus to jail. We find there were 30 300 imprisoned during the year, as against 26,974 in 1905 Of these 30,300 convicts, 70 53 per cent. were Hindoos and 21·42 per cent. Mahomedans, the remaining percentages being made up of Christians, Buddhists, Jains, and other classes. The number of re-convicted prisoners during the year was 4480 and the ratio per cent. to total number of convicts admitted was 14·78 as against the corresponding figures of 4410 and 16·34 in the previous year The number of youthful offenders under the age of 15 years was 130, of whom 24 had been previously convicted. Major Buchanan in this part of his report again strongly animadverts on the practice of sentencing small boys of 10 or 12 years of age to imprisonment for petty

[1] No. I. was published in THE LANCET of Feb. 22nd, 1908, p. 582.

offences; rather should they either be sent to a reformatory or else whipped and discharged, their parents being made to execute a bond for their good behaviour.

But not only does this energetic officer consider the interests of the prisoners under his jurisdiction, he is also alive to those of the warders. There are certain admitted grievances felt by them; of these the Inspector-General has taken note and has accordingly recommended Government to improve their pay and position. With respect to the employment of convicts as prison officers, with a daily average population in the jails of 13,404·39 males and 344·85 females, an average of 854·45 male and 15·91 female convict officers was employed during the year. Major Buchanan rightly holds that enough is not done for the class of casual offenders as prison officers in the matter of support. They should be granted many privileges so that they may give their services whole-heartedly on the side of authority. Respecting the present system of calculating marks for remission of sentences, this has previously been found cumbrous and difficult, and Major Buchanan had submitted proposals for its simplification; it is to be regretted that he has heard nothing further of his proposals.

The report contains other valuable minutes concerning expenditure, dietary charges, hospital charges, cash earnings, and other points that he has reviewed. With regard to the profits earned in the jails, there was an average profit of Rs.46 12 annas per head of those sentenced to labour. Finally, the Inspector-General reviews the circumstances connected with the jails in his command and concludes his report with remarks as to the incidence of various diseases, such as cholera which in no case obtained any footing in a jail, the outbreaks being promptly and efficiently handled; dysentery, an inquiry as to the nature of this disease in jails having been instituted by Government and an officer sent to study it in the Bengal prisons at the instance of Major Buchanan; malarial fevers, where again we note the strong supervising hand of this officer, an instance being given by him of the effect of the measures which he ordered in the Baxar jail, the percentage of cases in 1903 before these measures were undertaken being the average daily strength 0·53 and subsequently to then being 0·26; tubercle of the lung, which is being now treated on modern lines; and plague, which it is pleasing to note accounted for only eight cases. In the concluding sentences of this excellent report Major Buchanan alludes in an appreciative manner to the good work done by the various superintendents of the jails of the Bengal Province. We note especially the keen devotion to his jail shown by that energetic officer the late Lieutenant-Colonel H. J. Dyson, I.M.S. The appendix contains a large number of statistical figures. Major Buchanan is to be congratulated on the excellence of his report.

The United Provinces.

Turning now to the annual report on the jails of the United Provinces for 1906, which is furnished by Lieutenant-Colonel C. Mactaggart, I.M.S., the Inspector-General of Prisons for the Provinces, we find that there was an increase of 1231 male, 247 female, and 68 under trial female, with a decrease of 276 under trial male prisoners for the year, which small increase is rather remarkable considering the high prices of grain that were the rule during this year, for a few years ago a rise in the price of grain was invariably followed by a large increase in the prison population. It would seem that this is accounted for by the general increase in wages earned by workmen. The report deals with the number of convicts and their disposal during the year, and with their religion, age, state of education, and previous occupation; it shows the convicts admitted during the year and those remaining at the end of the year, according to the length and nature of their sentences, whilst a further statement gives the convicts admitted into the jails during the year who were previously convicted. Other sections of the report deal with the escapes and recaptures of prisoners, the offences committed by convicts, and the punishments inflicted on them; here we note a marked gradual fall in the number of corporal punishments, floggings having been ordered on only 91 occasions in 1906, as compared with 104 in 1905, and 175 in 1904. Another section of the report deals with the employment of convicts as prison officers, and yet another with the scales of diet in force during 1905. Next follows the financial statement, and here we note that the total expenditure incurred in guarding and maintaining the prisoners in the jails amounted to Rs.15,38,798, as compared with Rs.13,50,515 in 1905, or an increase of Rs.1,88,283. The average cost per head amounted to Rs 61 13a. 5p., or an increase of Rs.4 13a. 4p. over that of 1905. This increased charge was chiefly due to "dietary charges," "clothing and bedding of prisoners," "miscellaneous services and supplies," and "extraordinary charges," the latter charges being almost entirely due to the supply of uniforms at the Government expense to intra-mural warders; formerly these officials provided their uniform at their own expense. Colonel Mactaggart then proceeds with the subject of special industries carried on in the central jails, which include printing, oil-pressing, tile-making, carpenter and blacksmith work, moonji matting, carpet durrie and blanket weaving, cotton-cloth weaving, and tent-making. With regard to the carpet weaving, there seems to have been at Agra a considerable decrease in the out-put of the carpet factory, only 1322 yards having been manufactured as compared with 2226 yards in 1905. This was due to the want of orders for carpets. The total cash profit earned by the prisoners was Rs.2,62,584, as compared with Rs.2,35,251 in the previous year.

With regard to the vital statistics for 1906, whilst plague and cholera prevailed amongst the free population of the United Provinces the inhabitants of the jails were not affected to any considerable extent, although the malarial fevers of a very bad type which were rife in the free population did affect to some extent the prison death-rate. There is a very satisfactory result noted, namely, the very low death-rate in the Mirzapure jail, as the latter was formerly one of the most unhealthy jails in India. Manipure jail was also fortunate in this particular. Dealing with the individual details we note that although cholera was markedly epidemic in the provinces, causing over 124,000 deaths amongst the free population, yet the number of cases and deaths in the jails was very small, only 17 cases with 11 deaths occurring. We wonder how the "climatic theory" formerly in vogue would explain this. Dysentery showed no rise in the death-rate for 1906, which is a matter for congratulation considering the famine conditions prevailing in many districts. In all jails patients suffering from dysentery are now segregated, and every possible precaution is taken to prevent the spread by infection. Malarial fevers showed a large increase in the number of admissions and deaths, these fevers having been extremely prevalent during the year in these provinces. With regard to tuberculosis, every effort is also made to segregate the prisoners affected, special wards in all the central prisons having been instituted in which the open-air treatment of that disease can be carried out. Plague was markedly epidemic amongst the free population, yet there was a practical immunity in the jails from this disease, only one case (which was fatal) being recorded compared with 26 cases and 19 deaths in the previous year. This one case was in a prisoner under trial who was suffering from the disease when admitted to the jail at Bara Banki. The measures of prevention as regards an outbreak were therefore extremely successful, large numbers of mice and rats being destroyed and effective measures being taken to prevent rats entering the jails by the drains. The whole tenour of this valuable report shows what excellent results can be obtained under the wise precautions instituted by the superintendents of jails and their inspector-general.

The Punjab.

The report of the Punjab prisons is furnished by the Inspector-General, Lieutenant-Colonel G. F. W. Braide, I.M.S. We find here also a very satisfactory decrease in the admissions from 38,079 in 1905 to 36,426 in 1906. The number of juvenile offenders admitted still stands at an unnecessarily high figure, notwithstanding the relaxation of the rules of admissions to the well-equipped reformatory school at Delhi. The attention of the judicial authorities is wisely called to this fact. It is also proposed to separate the class of juvenile adults if the practical difficulties connected with this separation can be overcome. Discipline has been satisfactorily maintained, whilst concurrently with this corporal punishments have been reduced to a very low scale. It is a matter also of satisfaction that the death-rate of 16·34 per 1000 of 1905 has fallen during 1906 and stands at the very low figure of 15·76. In certain jails it is still lower and the report is not exceeding legitimate expectation when it expresses the hope that it can be still further reduced. The inspector-general and the various superintendents acting under him well deserve the thanks of the officiating Lieutenant-Governor of the Punjab.

The North-West Provinces.

Lieutenant-Colonel A. M. Crofts, C.I.E., I.M.S., furnishes

the administration report of the jails of the North-West Provinces. In these jails we find also the number of admissions was less during the year 1906 than during the two previous years. The class of prisoner here under review might naturally be expected to give the jail authorities a certain amount of trouble, and this has apparently been the case, for we find that the total number of prisoners on whom fetters were imposed rose to 1361 in 1906, as compared with 1282 in 1905. In Peshawur the superintendent of the jail reports the difficulty he has had in recruiting Punjabis for the warder service, whilst the men entertained are distinctly inferior to those recruited prior to the separation of the provinces from the Punjab. This appears to be chiefly a matter of pay. The chief diseases encountered were malaria, dysentery, and pneumonia. Quinine did not seem to have had much effect as a prophylactic against the first, probably from the drug having been administered too late in the year.

The Central Provinces.

Regarding the jails of the Central Provinces, in his remarks on the report of Major W. B. Lane, I.M.S., the Chief Commissioner lays stress on the importance of providing separate accommodation for the juvenile adults. There is here also a large decrease in the jail population as a whole, although the number of prisoners with previous convictions is practically the same as in the preceding year 1905. With respect to the health of the prisoners it is extremely satisfactory to note the decrease in respiratory diseases in the Nagpore jail, the total absence of any diarrhœa or dysentery in the Jubbulpore jail, and the entire freedom of the jails from plague and cholera, although both these diseases were prevalent during portions of the year in several districts.

Burma.

Lastly, we come to the report of Lieutenant-Colonel G. J. H. Bell, I.M.S., on the jails in Burma. Here we find a large increase in the jail population—viz., 14,129 persons were confined as opposed to 13,228 during 1905. On account, therefore, of the total accommodation available the proposal to close the Rangoon Jail has had to be postponed. In Burma we find also the same desire to separate juvenile from adult prisoners as has been shown in other Indian jails, but the matter is not an easy one owing to the limited accommodation present. Habitual prisoners have now for the last three years been placed under the charge of special convicts of their own class with satisfactory results, although it is doubtful whether the system is consistent with the orders prohibiting the employment of habitual prisoners as prison officers. With respect to the health of the jail population, there was a decided improvement during 1906, the ratio of admissions to hospital falling from 320·33 to 279·43 per 1000. The only jail in which anxiety was felt as regards the health of the prisoners was that at Theteymyo but it is hoped that the proposed improvements in ventilation and water-supply will effect a change for the better.

From a perusal of these reports but a faint idea can be gathered of the wearying and never-ending work of the superintendents of jails, work which is certainly one of the most onerous and responsible duties that fall to the lot of the officers of the Indian Medical Service.

ST. MARK'S HOSPITAL FOR FISTULA AND OTHER DISEASES OF THE RECTUM, CITY-ROAD, E.C.—Sir Richard B. Martin, treasurer of the hospital, presided at the annual general meeting of subscribers to this charity held on Feb. 13th. In moving the adoption of the report of the committee, he said that the hospital had the disadvantage of being situated in a noisy neighbourhood, but on the other hand it had the great advantage of doing its beneficent work among the very poor in their own district. He pointed out that from the very nature of the distressing diseases attended to by the hospital it was necessary to keep each patient under treatment for a longer period than would be possible in a general hospital, and he was glad to say that during 1907 King Edward's Hospital Fund, the Hospital Sunday Fund, and the Hospital Saturday Fund had all sent contributions—a valuable endorsement of the work accomplished. Mr. F. Swinford Edwards, surgeon to the hospital, said that the past year had been a very successful one from a surgical point of view. There had been many severe cases, especially of cancer, and in 36 such cases operations had been performed.

ALLEGED CASE OF COCAINE POISONING AT SLOUGH.

AN inquest of considerable importance to the medical profession and also to the public was opened at Slough on Monday last by Mr. J. Bailey Gibson, the deputy coroner for South Bucks. It arose on the circumstances attending the death of Mrs. Margaret Edith Weston, a married woman, aged 36 years, who died on the previous Thursday evening at The Cedars (the residence of Mrs. Buée) from alleged cocaine poisoning. The deceased lady had been suffering for some time from asthma and when Dr. R. S. Charsley was called in on Feb. 12th he discovered symptoms of cocaine poisoning and as a consequence he refused to give a certificate. The facts were fully laid before the jury on Monday.

Mrs. ISABEL JANET VOWLES of 36, Belgrave-street, London, sister of the deceased, said Mrs. Weston had resided at The Cedars for nearly two years; she was living apart from her husband, from whom she was separated. Her husband (Harry Weston) was formerly an insurance agent.

The CORONER: I think I am right in saying that your sister suffered from asthma and a weak heart almost from a child?—WITNESS: Certainly from asthma; I cannot say about a weak heart. The first time I heard anything of that was six years ago.

You know she suffered from a weak heart as long as six years ago?—Yes; and asthma from a baby.

Do you know whether she was taking anything for either asthma or heart trouble?—She was taking an asthma cure.

How long has she been using that?—Certainly for two years.

Did it relieve her at all?—Immensely. I have never known her go so long without an attack since she has been using it.

Had it any evil effects upon her at all so far as you know?—No; she always said she felt so much better.

Do you know if she used it under the doctor's instructions or not?—I cannot say it was under a doctor's instructions, because it was recommended her by another person who used it. It was known she used it.

Was she attended by a doctor when she had an attack?—When she lived in Curzon-street two years ago Dr. Charsley attended her and he certainly knew she was using it.

Has Dr. Charsley attended her for two years off and on?—If she required medical attendance, but I cannot remember whether she did or not; he will be able to tell you.

During the last two years she has been very much better?—Yes, as regards asthma, and this summer she went cycling, which I have not known her do for some time.

Until Wednesday, the 12th, she was in her usual health?—On Saturday, the 8th, she came to London and went to a theatre. I believe she began with a very bad cold on Tuesday, the 11th.

And did she get worse or did the cold go off?—She seemed much as usual on Tuesday but on Wednesday she stayed in bed and Miss Buée wished to send for Dr. Charsley. My sister was not well off and Dr. Charsley had been very kind and she did not want to send for him unnecessarily. As her temperature continued to go up the doctor was sent for.

And were you present when the doctor came?—No; I was not here until the next day.

You do not know of your own knowledge what the doctor said was wrong with her?—The next morning Dr. Charsley told me it had begun with cocaine poisoning.

You were not present when the doctor actually saw her on Wednesday evening:—No; I did not know she was ill.

The doctor said she was suffering from bronchitis?—Yes; and that the heart was very weak.

Did she continue about the same, or did she get worse?—After Sunday she began to improve, and on the following Tuesday we were told she was out of danger.

The improvement was maintained until Thursday, the 20th?—Yes, sir.

What happened then? Did she get worse?—I left her about 10 o'clock on Wednesday night, when she seemed asleep. When I arrived at 10 o'clock the next morning I was disappointed to find she had had a bad night. I went to the nurse and said I did not like the look of her; her nails were blue and the nurse said that might be due to her leaning forward position, and that her pulse was still good.

Did she improve later in the day?—No; she became less restless, and at 1 o'clock I told the nurse I did not like the

condition of her pulse. We gave her brandy and she seemed better for a time. We were expecting Dr. Charsley every moment, but as he had been called away he was not so early as usual. I gave her a spoonful of brandy every hour in whatever nourishment she had. At 4 o'clock she seemed unable to swallow anything.

Did you send for another doctor?—Yes; Dr. Fraser came and administered oxygen and a strychnine injection. I asked him if I should send for a second opinion, which had not been considered necessary in the earlier stages, and the doctor said she would be better very shortly or else she would be gone. We could not hope to get an opinion from London under two hours.

Did she improve?—She improved slightly under the oxygen but sank away about 6 o'clock.

You don't happen to know if your sister was in the habit of taking other things without the doctor's instructions?—I don't think so except a little phospherine tonic I got for her because someone else told me it was a good thing.

When was that?—About two or three months back.

She had not taken it before?—No; I am sure it was quite new to her.

Did she take that regularly?—No; only just to see whether it did her any good.

Mr. E. L. REYNOLDS (representing the family): When the doctor said the illness began by cocaine poisoning did you understand she was suffering from that poisoning?—Yes, I understood so.

He said that on Feb. 13th?—Yes.

Had your sister suffered from sickness?—Yes, on Wednesday night I believe she was very sick.

Do you know the cause of it?—I think it was influenza because so many of my friends had that form of influenza.

Did she suffer from sickness subsequently?—No, not once whilst I was with her.

Did the doctor say that the bronchitis was any special kind?—Yes, purulent bronchitis.

Did you understand that it was a poisonous kind of bronchitis?—I understood it was very severe; I don't know that the word poison came to my mind. I understood it was very acute.

If the doctor said it began with poisoning did he give any remedy to counteract the poison?—I cannot tell you.

With reference to Tucker's inhaler, do you know if the doctor had forbidden your sister to use it?—I know he had warned her not to use it unnecessarily. I don't know that he ever said to any of her family that there was a danger attached to using it. I know she always did what we wished her to do.

Do you know if she knew the constituents of the inhaler?—No, I don't. I know she was interested in the case which recently arose because she wrote to my mother saying she was glad they had won the case because she had found it gave her such immense relief.

Did she afterwards find the inhaler did contain cocaine?—I suppose she knew that if she read the case, but she did not mention it.

Was she addicted to any drug habit?—Certainly not.

You don't think she took the inhaler because of its seductive influence?—Certainly not. She told some one she never used it unnecessarily. She has given it to her child, of whom she is passionately fond, and I am sure she would not have done that if she had not known it did her good.

Do you know if she used it in accordance with instructions?—Yes, as regards getting vapour. She had never had more than one quantity since she purchased it.

Does that consist of one ounce?—I don't know, but I know it is very expensive and she would not wish to buy more than was necessary.

As far as you know she only bought one ounce?—That is all.

And has been inhaling it for two years?—Quite.

Was the ounce finished at the time of her death?—Oh, no.

Is an ounce about two tablespoonfuls?—I don't know; I know she used very little.

In the course of further cross-examination witness said she understood that Dr. Charsley did not object to deceased using Tucker's inhaler, but that he strongly objected to her using it except under medical advice. She told her sister she was not to use it except under the doctor's advice and she promised not to do so. She knew her sister suffered from sleeplessness but she did not ask the doctor what caused it. She never knew her sister to have a bad attack of asthma without suffering from sleeplessness. She believed the doctor gave her a powder and some bromide.

Miss EDITH BUÉE said deceased had been living at "The Cedars" about two years. During the whole of that time she had suffered more or less from asthma and had used Tucker's inhaler. This had had a good effect upon her. She had used nothing else to her knowledge beyond the inhaler. Up to Tuesday, the 11th inst., she seemed very much as usual. The following day she was not so well and Dr. Charsley was sent for.

The CORONER: Did the doctor tell you what was the matter with her?—He said she was suffering from cocaine poisoning.

Did he know that she was using this inhaler?—Yes.

Did he tell her to stop it?—Yes, he stopped it altogether.

Did she use it after Wednesday, the 12th inst.?—No.

Were you present when Mrs. Weston died?—Yes.

Can you as near as possible describe the actual death? Was it sudden or did it take place gradually?—We noticed a change about a quarter past one.

What was the change you noticed?—She was faint.

After that?—She rallied.

Did she get better during the afternoon?—Yes.

When next did you notice any change?—About 4 o'clock.

What happened then?—She seemed worse and then she rallied again.

And she died about 6 o'clock?—Yes.

Did she die quite peacefully at the end?—Beautifully.

Mr. REYNOLDS: When did the doctor first tell you deceased was suffering from cocaine poisoning?—The night of the 12th.

When did he tell you the poisoning was over?—The next day.

What remedies did he give her for the poisoning?

Dr. CHARSLEY: Miss Buée cannot possibly know that.

Mr. REYNOLDS: Was deceased addicted to the drug habit?—No; not at all.

Do you know of her having taken any other drugs?—Never.

Do you know whether she liked taking Tucker's inhaler?—I know she never took it if she could help it. I said to her one day when she was depressed, "Won't you take Tucker's inhaler?" and she said, "I never take it if I can help it."

Did she appear to take it excessively?—No.

So far as you know she used it with the instructions Dr. Tucker gives?—Yes; I think so.

Do you know how much of the fluid she has used in two years?—I don't know; she has never had any more.

You believe she has only had one ounce?—That is all.

The CORONER: Can you say how full the bottle was?—No.

Mr. REYNOLDS: There does not seem any appreciable difference?—No.

Did she know that the fluid contained cocaine before the recent libel case?—I don't know.

Did the doctor tell you she had got bronchitis?—Yes.

Did he mention any form of bronchitis?—Yes, purulent bronchitis.

Did the doctor tell you she was out of danger?—He did not tell me.

Did the doctor say she must only use it for asthma?—Yes; he knew she used it.

The CORONER: You said he took it away.—Yes, when she was ill.

Mr. REYNOLDS: He had been attending her previously to Feb. 12th?—Not for some little time.

He knew previously to Feb. 12th that she had got and was using Tucker's inhaler?—Yes, he knew.

The CORONER: Did he tell her to use it only for asthma?—I always understood she used it for asthma.

After some discussion by the jurors as to when Tucker's inhaler was last used Dr. CHARSLEY asked: Did you understand me to say when poisoning had ceased that it was acute poisoning?—You said to me the cocaine poisoning has passed.

Dr. CHARSLEY: You must have misunderstood me, because of course cocaine poisoning had not passed. Do you know how many times she used to use this?—No; as little as possible.

When she went for a walk and felt out of breath, did she frequently use it?—I don't know.

Have you ever heard she used to use it a good deal at night?—No.

Has she ever told you she used it often at night?—No.

As to the warning about the poisonous effect, do you remember me telling you in my house once that she used it more than was wise? That was 18 months or so ago, after her last illness in Curzon-street? Do you remember we discussed it?—Yes.

I told you it was unwise for her to use it as much as she did?—You knew she used it.

I knew all along, but I told you she was unwise to use it so much?—I don't remember.

You remember discussing it?—Yes.

You cannot say for certain whether she had a further supply of it?—No; she had implicit faith in it.

She always had it at her bedside every night?—No.

Whenever she was ill she had it?—Not every night she did not have it. I know one night I asked her if she would have it and she said, "No, I never take it if I can do without it."

You are aware she went to the dentist two or three days before her illness and had a tooth out?—Yes.

The CORONER: When was this?—On Feb. 6th she had a tooth extracted.

The CORONER: We had better have the name.

Dr. CHARSLEY: Mr. Wilson.

Dr. CHARSLEY: Did she have a conversation with the dentist about Tucker's inhaler?

WITNESS: I cannot say.

Was she faint and giddy afterwards?—No, not at all.

The CORONER: Was the tooth extracted under cocaine?—Yes.

You saw her afterwards and she was not faint?—No.

How long was it after she had been at the dentist's that you saw her?—I went with her and brought her back.

She was not faint at all the whole time?—No.

Mr. REYNOLDS: Did she suffer any effect whatever from her visit to the dentist's?—Apparently not.

She made no complaint to you?—No.

Were you in the room when the cocaine was administered by the dentist?—Yes.

Did she suffer any effect at all?—No.

The CORONER: How was it administered—injected or sprayed on the gum?—I cannot say for certain.

CHARLES ALBERT WILSON, a dental surgeon, of 34, Mackenzie-street, Slough, said deceased came to him on Jan. 31st, when he dressed a tooth. On Feb. 6th he removed a tooth, having previously injected Waite's fluid. This contained cocaine in less than 1 per cent. of the solution. Witness was in the habit of using this. It had no effect upon the patient at the time, and it was perfectly safe when used cautiously. The amount he used was safe even in the case of a person suffering from a weak heart. The fluid injected was 25 to 30 minims. He had used it about four years and it was commonly used in the profession.

By Mr. REYNOLDS: The bottle was not marked poison.

Mr. REYNOLDS: We may take it that as it is not marked poison the amount of cocaine is so small that those who sell it think it is unnecessary to comply with the Pharmacy Act?—I presume so.

Can you tell us how much cocaine there is in 25 to 30 minims of this fluid?—I should think less than a tenth of a grain.

Would that be sufficient to cause any effect on a person with a weak heart?—I think not. I may say that I previously extracted a tooth for Mrs. Weston. It was a much more difficult extraction and I naturally injected much more freely with the same stuff with apparently no ill-effects.

Have you in your experience ever known a patient to suffer any effects from the solution?—A slight dizziness afterwards occasionally which might be due to shock from extraction as much as local anæsthetics.

Even when 25 to 30 minims were administered?—Yes.

A minim is what we call a drop?—I suppose; I cannot answer for certain.

In reply to Mr. PARKER, witness said the effect of the solution would be to make the part injected free from pain for about a minute after injection. He had never known it have any effect on the patient's heart. Of course, an overdose would be a very serious thing.

Mr. REYNOLDS: Is the effect of this fluid cumulative; if one went on using it time after time would the cocaine cumulate or the effect of it?—I should not say that the cocaine would cumulate, but I cannot say as to the effect.

Mr. FULLBROOK: How long before the effects of the dizziness would pass away; an hour or less?—I should think less than an hour. I have had cases where it has taken place in my room and I have given a little stimulant and the patient has gone away quite comfortable.

You would not expect any serious results?—No, certainly.

In reply to Dr. CHARSLEY the witness said when Mrs. Weston was in his room they had some conversation about Tucker's inhaler. She said she had tremendous faith in it. She said she used it considerably because she got relief from it.

Nurse MARGARET LEWIS CAREY said she was called in to the case on Feb. 14th and she attended deceased up to the time of her death. Deceased had not used Tucker's inhaler since witness had been in charge. Witness was with her at nights. She was told that deceased had been suffering from bronchitis and cocaine poisoning. She was told this by the doctor when she first came on Feb. 14th. During the next day or two the doctor seemed satisfied with the way deceased was going on and during the time witness was with her deceased took nothing but what was ordered by the doctor. Witness was not told that the symptoms of poisoning were gone and she did not remember if the doctor suggested that the patient was out of danger at any time. Witness could not say whether deceased showed any signs of poisoning.

Dr. CHARSLEY: That is not a question for the nurse.

The CORONER: Excuse me, doctor; I am entitled to put what questions I like. I only wanted to get to know whether it was very pronounced.

Mr. REYNOLDS: Do you remember having a conversation with the deceased a day or two before she died, when she asked you if she was out of danger?—I remember telling her she was going on all right and I certainly thought she was so a few days before death.

You actually told her she was out of danger?—I do not remember; I told her there was nothing to worry about and that she was getting on all right.

Was that simply to comfort her, or did you think she was out of danger?—I thought she was out of danger and that she was getting better.

When you first saw the doctor did he say she was suffering from bronchitis or bronchitis and cocaine poisoning?—I cannot tell you; it was cocaine poisoning and bronchitis I understood.

What form of bronchitis?—Purulent bronchitis.

Were you in the room when Mrs. Vowles came into the room and told deceased the doctor had said she was out of danger?—I do not remember that.

Dr. CHARSLEY: I would like you to tell the Coroner what you thought when you first came without any suggestion from me.—I thought she was very ill when I was first called, and I did not think she was going to get better, but the bronchitis seemed to improve.

Do you think she was unusually restless?—She has been restless all through.

What about sleep?—She slept scarcely at all.

How long altogether whilst you were there?—The longest sleep whilst I was on duty was three quarters of an hour.

Although she had paraldehyde and other sleeping draughts?—Yes.

Before that she did not sleep for practically four or five days?—Yes.

Sergeant FIELD said in consequence of information he went to The Cedars and from statements made he took possession of the Tucker inhaler and also a small bottle containing phospherine. There was nothing else in the room beyond what was supplied by the doctor in the shape of drugs.

Mr. BRADFIELD: Witness received information that a doctor's certificate could not be given and consequently he was bound to make inquiries. The phospherine and the inhaler were just as he took them from the room; they had been in his possession ever since.

Dr. ROBERT STEPHEN CHARSLEY said deceased had been a personal friend of his and a patient for at least six years. She suffered principally from asthma, but she had other small troubles. He saw her frequently about these and also about her private troubles, with which he sympathised very much. He was under the impression that deceased had only had two previous illnesses except trifling ailments.

The CORONER: Was it known to you that she had a weak heart?—Yes.

When did you first know that?—When I first came into contact with her professionally. It was not a diseased heart but simply a heart with a weak action.

About two years ago there was nothing serious the matter with her except chronic asthma?—No; she had asthma and bronchitis once or twice.

Did you attend her two years ago?—Yes.

For asthma or the heart?—Asthma and a certain amount of bronchitis.

And was she then using this Tucker's inhaler?—Yes.

And she went on using it after you attended her?—She has told me so.

You did not stop it?—I told her she must be very cautious how she used it because she seemed susceptible to the action of this cocaine. From what I noticed then I thought she

was affected to a certain extent by it, and my warning was in consequence of my observations. I remember distinctly telling Miss Buée, though she seems to have forgotten what I told her. I discussed the question with her and naturally should have said so.

That was two years ago?—Since two years.

Is it not a fact that cocaine is a most dangerous thing for anybody to take with a weak heart?—That fluid contains two of the most dangerous drugs in the Pharmacopœia. Cocaine has a different effect on persons. One might take six to eight grains without it having any effect, whilst another could not stand the smallest quantity.

But a person with a weak heart?—The heart is the organ primarily affected by cocaine. The other drug, atropine, is the most dangerous drug we ever handle; it is ten times more powerful than strychnine.

Knowing this you did not consider it necessary to stop its use?—I know no treatment which relieves asthma so well as that does, but it has to be used with the greatest caution and especially by people with a weak heart.

You did not think it necessary to knock it off?—I did. I told her not to use it except on rare occasions.

You simply told her not to use it too often?—No, I thought if she used it cautiously it would relieve her.

You think it is a good thing?—I think it is a very excellent remedy used with great caution. The difficulty is that people find relief by using and use it too much, and then they suffer more from the remedy than the disease. This is so in many cases.

When you told her to knock it off to a certain extent, or take it only occasionally, did she get better?—She recovered from the illness I treated her for. I did not see her again for some time, but I have certainly discussed this question with her twice since.

And always advised her to use it sparingly?—Only very sparingly.

Could you tell if it was having any evil effect upon her?—That is a very difficult question to answer, because this cocaine taken frequently is a very difficult thing to recognise. I did notice that she was extremely pale and very depressed, which are symptoms produced by cocaine, but I cannot say it was cocaine that was doing it. I have not seen her very much for the last 18 months.

Just now you said that she was somewhat affected by it and you warned her?—That was at the time she was ill in Curzon-street.

You have not seen much sign of it?—I saw her once or twice in 18 months and I remember talking to her about it again.

You did not see her really again until Feb. 12th?—Occasionally for indigestion, and I talked to her about it once or twice.

During that time you did not notice any more symptoms?—No.

When you saw her on the 12th what did you attend her for?—I was called late in the afternoon and I certainly thought then, and think now, that she was suffering from overdoses of cocaine.

Anything else?—Yes; she had bronchitis. She was suffering from marked heart failure, with feeble fluttering pulse, blueness of the hands, and coldness of the extremities; there was great pallor and she was very ill.

Would you say the poisoning was acute or chronic?—More chronic than acute. Of course, it is difficult for me to say and I do not speak with any authority.

It is very rare that death occurs from cocaine poisoning?—Yes. The point of the matter is that her heart was very feeble and weak and there was not enough in her general symptoms to cause the weakness as far as I could judge.

Did you knock it off?—I did when I went on the 12th. I was told by her she had been using it a good deal, and I took it away and put it on the mantelpiece.

Not from the house altogether?—No, I took it from the table at the bedside and put it on the mantelpiece.

Ordering her not to have it again?—Yes. I may say that I have seen previous cases of cocaine poisoning; two severe and two mild cases I can remember.

Do you know what constituents or ingredients are in this mixture in the inhaler?—Yes, but I cannot tell you the proportion.

You know the ingredients but not the amount?—Nor did I inquire how much of the liquid she had been using. I only exercised my judgment as to what was the matter. I cannot believe 2 ounces have lasted her two years.

When did you first consider it necessary to call in a nurse?—I tried to get one the next day but I could not as there was not one to be had. I knew Nurse Carey was disengaged then or thereabouts, and she said she would come the following day, so I thought it as well to wait for her.

What treatment were you giving deceased?—She had no asthma, only bronchitis; there were no symptoms of asthma, but she had urgent symptoms of heart failure, which I treated, neglecting the bronchitis. I treated her for the first five days for heart failure until she got better, and the bronchitis also improved at the same time.

Were there symptoms of cocaine poisoning?—Yes, I think extreme loss of sleep one of the symptoms of chronic cocaine poisoning, as well as her restlessness and tremulousness. She could not keep still and did not remain in one position hardly a minute. That confirmed my previous diagnosis.

You never thought or stated to anyone that cocaine poisoning was non-existent?—Never; I said it was passing off in the acuter symptoms and that the heart was regaining its power and strength under the influence of strychnine and stimulants.

You gave her strychnine?—Yes, and whisky. She had, I think it was, half a pint in the first 24 hours. I know we had to give her a considerable quantity and she did get very much better. I thought on Tuesday she was practically out of danger, and I told one or two people so who came to make inquiries. Her bronchitis got better every day and I think I was justified in my hope that she would get quite well.

Is it usual to give strychnine in cases of cocaine poisoning?—Certainly; it is the strongest heart stimulant we possess. Strychnine, sal volatile, and whisky; she had all three heart stimulants and it was not until the last two days that I gave her anything to relieve bronchitis.

Is not cocaine a heart stimulant?—Only when it is first given; it is really a heart depressant and when it kills it kills by heart failure. It does permanent injury to the heart and is worse than a heart depressant when it is continued.

Under the circumstances the extraordinary part seems to be that you did not knock her off two years ago; you knew she was going on two years?—You have to use a drug like that with discretion. She had attacks of asthma which this undoubtedly relieves; if used cautiously it would not have done any harm. I discussed its use very gravely with her.

What were the symptoms which made you think it was cocaine poisoning—insomnia?—No; acute heart failure when I first saw her. Very little of this drug will do that for some people who are sensitive to it.

But some people have heart failure who have never touched cocaine in their lives?—Yes, but there must be some cause for it.

Directly you saw heart failure you put it down to cocaine?—I thought it was the most probable cause.

You have no other ground for thinking so?—Except that I knew she had been using this inhaler, and I was told she had been using it fairly frequently. She told me herself, indeed, that she had done so.

Did she say how often?—She said when she came in from a walk and was short of breath she used it, and her daughter told me she found her mother using it when she woke up at night.

That was about the 12th Feb.? I put it to you, doctor, that if this case of Tucker *v.* THE LANCET had not been published in the papers you would never have thought of putting it down to cocaine poisoning?—I thought she was suffering from cocaine poisoning two years before THE LANCET case started.

And you still allowed her to use it?—With discretion, certainly. I told her from the very first that cocaine was a dangerous drug in any quantity. When a person has an acute case of asthma I think a remedy like that very valuable. There is the difficulty of getting people to use the drug with discretion.

After the 13th or 14th deceased began to improve?—I think it was about Saturday (15th) she began to show signs of improving. The bronchitis and her heart got better, but she was still very restless. She varied until Wednesday, but this terrible want of sleep was fatal in the end. During the whole week she only had about a couple of hours' sleep and then it was drug sleep produced by bromide or paraldehyde.

The drugs you ordered were quite harmless?—Yes; I hope they were, at least.

Is strychnine a harmless drug?—Given in proper quantities and under supervision.

You saw her on Thursday?—I came about midday and said I would come again in the afternoon. When I came then I found my partner there.

Was she about the same?—She was suffering from heart failure and she seemed quite exhausted from the continued want of sleep. Her bronchitis was certainly not distressing her very much.

Were there any symptoms then beyond sleeplessness?—No; only continued and great heart failure which had reappeared.

Was there anything to show that cocaine poisoning caused death?—No, not then. My impression was that she would have got well if it had not been for that. A young woman of her age does not die from heart failure, without heart disease, unless there is some cause.

She had suffered from a weak heart?—Her heart was perfectly sound; it was simply acting weakly.

What do you consider to be the cause of death?—Syncope.

Simply due to syncope?—Yes, syncope, caused by exhaustion and cocaine poisoning if I am right in that.

Do you think it was simply syncope by exhaustion?—She went a whole week without sleep, which I put down to cocaine poisoning, and also her heart's increased weakness, which I attribute to the same cause.

The FOREMAN: The doctor states that he advised deceased not to use the inhaler or only to use it sparingly. Had you some fears, sir, if it was used too freely what the result would be?—Yes, I had.

Did you tell her practically what the result would be?—I told her in any case that cocaine was a dangerous drug to use, especially when a person had a weak heart. I thought myself once or twice a day would have been sufficient, but I was told that she used it as much as 20 or 30 times a day. I made no inquiries about the quantity used.

Mr. FULLBROOK: You said you had known three other cases of cocaine poisoning; in either of these cases was Tucker's inhaler used?—No.

In reply to other questions Dr. CHARSLEY said he thought it was a very valuable remedy for people suffering from asthma. The difficulty was that, people finding relief, used it too often. Cocaine was a most seductive drug and was worse than morphia.

Mr. FULLBROOK: If it has that effect would you not say it was dangerous to be used by unqualified persons?—I think all remedies of that sort are. I think we all use too many kind of drugs. It is much worse than alcohol. Holding the opinion I did I had no right to give a certificate.

Mr. FULLBROOK: It opens out a very serious question for the jury to decide.

Mr. PARKER: Suppose a person suffering from asthma had taken this for years, would it eventually affect the system or the heart?—It depends on the person. One might take 10 grains and not be ill and another might not be able to take a quarter of a grain. I had a tooth extracted once and the cocaine made me feel faint. It was the same fluid as Mr. Wilson used. I don't think I have a weak heart.

Mr. REYNOLDS: Was this a case of chronic poisoning?—I certainly think it was; it might have been acute on top of chronic. If Mrs. Weston had bronchitis which she imagined to be asthma and she used it frequently for 24 hours she might have got acute symptoms on top of chronic.

They were chronic?—I think there were more symptoms of chronic than acute.

Any chronic effects upon the general system more than the heart?—I think the heart the first thing affected. It has a poisonous action on the system but the heart is primarily affected and is the most dangerous.

What is the effect in an acute case?—The heart is also chiefly affected.

Is there any difference between acute and chronic?—Not except in the degree at the moment. Cocaine is somewhat a new drug. Different people are affected in a different way, therefore I cannot make any very definite statement.

Can you account for the sickness on the 12th inst.?—No.

Would the poison have any effect upon the stomach?—Not in the way of sickness. It causes indigestion if taken for a long time; the digestive organs are not affected at once. The nervous system is affected but the heart primarily.

In cases of cocaine poisoning are there any special symptoms?—Yes, certainly.

Apart from any other poisonous drug?—Yes; in chronic cases you get sleeplessness and tremors and all sorts of nervous symptoms; in acute cases you get heart failure principally.

In your opinion these were all the symptoms of cocaine poisoning?—Certainly; that was why I took the step I did.

Can you account for the temperature?—She had enough bronchitis to cause the temperature to rise.

Don't you think it was influenza?—No, I do not.

Before the bronchitis?—I cannot answer that.

The doctor was questioned at some length as to the question of degree of bronchitis and influenza. He admitted he had known young people die from heart failure following influenza but not after 24 hours of influenza. There were different degrees of purulent bronchitis.

Mr. REYNOLDS: Is it not perfectly reasonable that death might have been caused by bronchitis and asthma together?—She did not have asthma.

She had previously?—A year ago, so far as I know. There was none at all when I saw her. The air was entering the lungs quite freely. In asthma you get a difficulty of inspiration. That is what is relieved by this thing; it is antispasmodic. If used for bronchitis it would do harm.

As to the inhaler?—It should be used in a judicious way and only very seldom, as I told deceased.

You say she had a weak heart six years ago?—I cannot trust my memory. I remember telling her her heart was not strong in its action previous to two years ago.

If she had a weak heart, after six years of asthma it would be considerably weakened?—I don't know; she did not have asthma constantly.

Every spasm would weaken the heart?—People live a long time with asthma.

But asthma would considerably weaken the heart?—To a certain extent it does cause extra work for the heart to do.

Would it be right to say that the heart was strained by asthma only?—I don't think it was frequent or severe enough to damage the heart considerably. I know people who have constantly had it and yet lived to 70 or 80 years of age.

You say she used this thing 20 or 30 times a day?—She told me so when she had asthma before.

On an average?—No, I don't say that.

You said two years ago she suffered from cocaine poisoning?—She had symptoms.

She only had the inhaler two years ago and the amount she could have used was infinitesimal?—I cannot help that.

Can you tell when a person has been poisoned by listening at the heart?—No; except that you find great heart weakness.

Therefore your examination of the heart did not lead you to think that she had been poisoned?—When speaking of her last illness I saw the danger it did and I thought she was poisoned. Her heart was remarkably irregular and I did not think her illness was sufficient to account for it. I knew that was one of the symptoms of cocaine poisoning.

By listening at the heart could you tell she was suffering?—Not by listening at the heart only, but by general symptoms I detected cocaine poisoning.

Was sleeplessness produced by cocaine poisoning?—It is one of the symptoms. She went a week with only drug sleep.

Do you know if she suffered from insomnia when in fairly good health?—I cannot say.

There is nothing unusual in that?—I should say there is in a week's sleeplessness.

My instructions are that she has always suffered from it. Do you think cocaine accumulates in the system?—I do not think it does, but I think the effect of it does.

This was analysed by Dr. Willcox. Do you know him by name?—No; I have read his name in the paper.

Do you know he is the analyst at the Home Office?—Yes.

Would you be prepared to accept his analysis?—I suppose so.

His analysis shows that it contains 2·28 grains of cocaine—roughly, 2¼ grains to the ounce?—I don't think that is a point in the case.

There are 440 minims to the ounce, are there not? If there is a 200th part of a grain in a drop, how many compressions of the bulb would go to make a drop?—I don't know.

Would 100 compressions of the bulb make one drop?—I know nothing about it.

If 100 compressions make one drop every compression would be a 20,000th part of a grain?—I don't think I know or care anything about it. My impression was that she was suffering from cocaine poisoning and my duty was to act as

I did. I don't know how many drops go to make a bulb full.

That bottle contains an ounce when full; 2½ grains of cocaine?—I know from my professional experience that people with a very minute dose of cocaine get very ill sometimes. This was a case which showed great sensibility to the action of this drug. I have known an injection of a quarter-grain of cocaine which necessitated artificial respiration for 12 hours. This was where a tooth was extracted and a fluid containing cocaine used. I don't want to labour the case but I consider it to be a case where cocaine should have been used with extreme caution.

You accept the statement that deceased only had one bottle in two years?—No, I don't; I think she must have had more.

Did you know what Tucker's specific contained before the recent libel case?—Yes, roughly.

Have you ever heard of a case where a patient has suffered any ill effects from this specific?—No; I don't think I have.

Witness was then examined as to the evidence given in the recent libel case, particularly as to the statements of Sir Lauder Brunton and Sir Douglas Powell.

Mr. FULLBROOK, a juryman, asked if there was any need to introduce a case which had been tried in another court.

After replying to several questions bearing on the libel case Dr. CHARSLEY, in answer to Mr. FULLBROOK, said he did not think the jury would be in a better position to bring in a verdict if a post-mortem examination was held because cocaine poisoning could not be detected.

Mr. FULLBROOK: It is a case where we are absolutely in the hands of a medical adviser. It is so difficult to come to a decision. I should advocate a post mortem.

The CORONER: We have not come to that yet; I have an alternative to suggest presently.

Mr. REYNOLDS put several other questions and concluded with: Do you think you would have given a certificate if it had not been for this libel case and the facts from it?

Dr. CHARSLEY: No; I don't think I should. As a matter of fact, I did not read the libel case until afterwards. I did not read it until this Saturday and Sunday. I had only heard there had been one and did not read it in the daily papers. I have been so busy of late.

The CORONER said he did not intend to comment on the evidence, as the jurymen had heard as much as he had and no words of his could amplify it. What he felt was that if the jury did not think there was sufficient evidence to bring in a verdict they should have an adjournment for a post-mortem examination. The doctor said it would not necessarily show any cause for death, but he thought they ought to have the stomach analysed by a specialist in London. If they decided to adjourn for an analysis he suggested that an entirely independent doctor be called upon to do it, if only in fairness to Dr. Charsley. The evidence was very conflicting and he left it to the jury to say whether it was death due to heart failure or whether they considered there was sufficient evidence of cocaine poisoning.

After 20 minutes' deliberation the jury agreed to ask for a post-mortem examination and the inquiry was adjourned until next Monday at 11 o'clock at the Crown Hotel.

ANNUAL REPORT OF THE REGISTRAR-GENERAL FOR THE YEAR 1906.

II.[1]

WITH respect to English mortality generally in the year 1906 a favourable account is given in the present report. In that year the deaths from all causes corresponded to a rate of 15·4 per 1000 living of both sexes and at all ages. This rate, although higher by 0·2 per 1000 than the rate of 1905 (which had been the lowest on record), was below the mean rate in the quinquennium 1901–05 by nearly 4 per cent. Among males the rate was equal to 16·4 per 1000 living and among females to 14·4 per 1000. Compared with the average rates in the preceding five years the mortality of males was lower at all age-groups below 55–65 years, and that of females was lower at all age-groups except the highest. The returns for 1906 show striking differences in the mortality of town and country, and this more especially at the outset of life. As compared with the average for the period just mentioned the mortality within five years of birth in the rural areas was only about two-thirds of that in the urban; and at all stages of life except the group 20–25 years in males and 15–25 in females mortality was decidedly the lowest in the rural areas.

Among the causes that are responsible for the greatest waste of human life in England exceptional prominence is attached in the present report to tuberculosis on the one hand and malignant disease on the other. The first-mentioned disease still continues to destroy a larger number of victims annually than does any other single cause, whilst the last-mentioned disease still shows not only no abatement in fatality but an actually increasing fatality in each successive year.

On the subject of tuberculosis, the statistics in the present report are well arranged and commendably full and they will repay careful study. We would direct particular attention to a chart which has been specially prepared to show the behaviour of mortality from tuberculosis in the course of the last 50 years. By means of differential shading the mortality is shown for tuberculous phthisis and for other tuberculous affections separately, and the rates have been made comparable by recalculating them on the age constitution of the enumerated population in 1901. What is particularly noteworthy in this chart is the near approach to uniformity of fall which characterises the curve throughout the greater part of the half century, or, to speak precisely, in the interval between the years 1866 and 1905. Within that period the mortality caused by tuberculosis has fallen to just half of its former amount. But on examining the figures for 1906 we find that there has been in that year no continuance of the remarkable fall just referred to. On the contrary, there has been a slight rise in the tuberculous mortality of that year as compared with that of the year immediately preceding. Nevertheless, the difference in the rates is so small as to suggest the probability of its dependence on changes in the medical certification of causes of death. The Royal College of Physicians of London has recently issued the latest revision of its standard work on "Disease Nomenclature," a copy of which was distributed at the cost of the State to every registered practitioner of medicine. Having attentively perused those parts of the work which deal with the various forms of tuberculosis we find frequent instructions to medical men for the better registration and classification of diseases considered as causes of death. These suggestions, if generally followed, would tend, *pro tanto*, to increase the number of deaths definitely referred to tuberculosis at the expense of less definite or merely local conditions. For example, in dealing with pleurisy—a disease that is known in a large proportion of cases to depend on this particular infection—the College inserts a special instruction that "when pleurisy (either acute or chronic) is known to be tuberculous the fact should be stated." Again, with respect to the use of the general term hydrocephalus, there is a similar warning that cases of tuberculous meningitis should be returned as such and should not be included under "hydrocephalus." And further, in dealing with the various forms of spinal disease, the College is careful to insist that when psoas, lumbar, post-pharyngeal, and other spinal abscesses are due to tuberculosis the fact should be stated in the Register. Having regard to the foregoing considerations we are not disposed, in the absence of stronger evidence, to accept the recent check in the fall of the recorded mortality from tuberculosis as otherwise than merely apparent.

In the year 1906 tuberculosis was responsible for a death-rate equal to 1644 per 1,000,000 of the English population, and for nearly 11 per cent. of the mortality from all causes. Of the deaths at all ages 19 per cent. occurred at ages under five years, the death-rate at that stage of life being equal to 275 per 100,000 living of both sexes. Of the total deaths from tuberculosis not less than 70 per cent. were due to the pulmonary form of the malady, the mortality from tuberculous phthisis being at the rate of 1150 per 1 000,000 living at all ages, which, although slightly higher than the rate of the previous year, is nevertheless substantially below the rate in the preceding quinquennium. As has been the case for many past years pulmonary tuberculosis is now enormously more destructive to the male sex than to the female, the death-rate among males in the year 1906 being 1356 per 1,000,000 living of that sex, as against 937 per 1,0 0,000 among females. The local distribution of mortality from this disease likewise varies greatly in both sexes, according as a given area approaches more nearly to an urban

[1] No. I. was published in THE LANCET of Feb. 15th, 1908, p. 516.

or to a rural character. Thus, among males the mortality from pulmonary tuberculosis in the selected urban counties was higher than in the selected rural counties by 27 per cent., whilst the corresponding mortality among females was lower by about 4 per cent. in the urban counties than in the rural. Among males alone the English counties the mortality of which from pulmonary tuberculosis was highest in 1906 were Sussex, Lancashire, Carnarvon, and London, the counties with the lowest rates in that sex being Buckinghamshire, Wiltshire, Monmouthshire, and Derbyshire. Among females the rates were highest in Durham, Northumberland, Carnarvonshire, and Carmarthenshire. They were lowest in Buckinghamshire, Somersetshire, Derbyshire, and Middlesex.

From a table in the report it appears that the age distribution of mortality from pulmonary tuberculosis is peculiar. For whilst at most other stages of life both male and female residents in the town suffer more heavily than those in the country, the reverse is true of young adults of both sexes who die more rapidly from this disease in the rural areas than in the urban. This peculiarity attaches not to the year 1906 alone but to the previous five years as well.

Tuberculous meningitis selects most of its victims from the younger members of the community, about seven-tenths of these being less than five years old at the time of death. The disease is more fatal to boys than to girls; but according to the returns its fatality in both sexes is gradually decreasing.

Tuberculous peritonitis also appears from recent reports to be less fatal than in former years. Like tuberculous meningitis, this disease is mainly destructive in the earlier portion of life, and also like it, tuberculous peritonitis is more fatal to male children than to female. In the interests of scientific medicine it is to be regretted that although "tabes mesenterica" has been expunged from the nomenclature of the Royal College of Physicians, and has been discarded by the medical staffs of the principal London hospitals, this term continues to be employed apparently to denote this form of tuberculous disease in about one-fourth part of the fatal cases so returned.

Under the head "Other Tuberculous Processes" it is customary to include, in addition to deaths from "general tuberculosis," a considerable number of fatal cases of tuberculous diseases of bones, joints, and of parts of the body other than those already referred to. A little consideration suffices to show that from a medical point of view the present is the least satisfactory section of diseases in this group. For example, the majority of deaths from such causes as vertebral caries and from psoas, lumbar, retropharyngeal, and other spinal abscesses are returned by some practitioners as definitely tuberculous and these deaths are classified accordingly; on the other hand, the same cases are returned by the majority of medical practitioners without reference to their actual nature in spite of the clear directions of the College. The consequence is that uniformity of classification is at present unattainable in the case of deaths thus variously returned.

With reference to the behaviour of malignant disease the Registrar General remarks that the sad pre-eminence of cancer—the one disease that, hitherto, has evinced no abatement of fatality—has been fully maintained in the year under notice, the mortality showing an increase of 32 per 1,000,000 on the rate of 1905. For this report a new and an interesting chart has been designed to show graphically the rapid and steady growth of cancer mortality in both sexes in the course of the last half century. Distinctive shading is employed to indicate how large a proportion of cancer mortality in women and how small a proportion in men have been due in recent years to invasion of the generative and mammary organs. It is now common knowledge that cancer is mainly destructive in both sexes after the attainment of adult age. Accordingly, in most of the tables in this report the mortality under 35 years is collected in a single group, the rates at separate ages being limited to age groups beyond 35 years. From a table contrasting the crude with the corrected rates of cancer mortality it appears that the death-rate from this affection is increasing more rapidly among males than among females. The crude, i.e., the uncorrected, rates would erroneously indicate that cancer is more prevalent in the country than in the town. Whereas, when the necessary correction is carried out for age differences among the living the exact opposite is found to be the fact, for it is now clearly shown that the rural areas suffer very much less severely than the urban. In this connexion Dr. Tatham reverts to a difficulty discussed in previous reports—a difficulty which greatly hinders the due allocation of deaths. This arises from the fact that many patients who have migrated from their homes in the country obtain admission to urban hospitals and some of them die there, their deaths being attributed to the district in which they actually occur. These deaths ought obviously to be referred to the place in which the patient had resided when the disease appeared. In present circumstances, however, it is found that the complete distribution of hospital deaths is impracticable. In the report for several past years the deaths from malignant diseases have been classified according to the part of the body invaded. By this means it has been established that certain organs of the body rarely become the seat of cancer. The cancer death-roll of the last six years includes not fewer than 176,019 persons, 71,601 of whom were males and 104,418 were females. In order to indicate on a sufficiently wide basis the relative susceptibility of various organs at the several stages of life these numbers have been reduced proportionally to 10,000 of all deaths from cancer among males and females respectively. The results are shown in two tables which are intended to give a ready means of determining, *for each sex separately*, the extent to which any organ or part of the body is liable to attack. It is hardly necessary, however, to insist that these tables will not show the relative frequency of cancer of any particular organ in one sex as compared with the other sex. The first table shows that among males the organ most frequently affected is the stomach which is the seat of disease in nearly 22 per cent. of the total cases of cancer, while among other abdominal viscera the liver and gall-bladder are invaded in 13 per cent. of the total cases, the rectum in 10 per cent., and the intestines in 8 per cent. Other parts specially liable to invasion in males are the mouth, lip, tongue, pharynx, throat, larynx, œsophagus, trachea, jaw, and lymphatics of the neck. The second table shows that among females the generative and mammary organs are affected in more than two-fifths of the total cases attacked by cancer, while invasions of the stomach, liver, intestine, and rectum together contribute a further two-fifths to the total.

MEDICINE AND THE LAW.

Professional Secrecy.

DURING the course of a paternity case in Christiania the magistrate demanded from the authorities of the maternity hospital where the child was born a certificate as to the child's maturity (measurements and weight). The senior physician, Professor Brandt, refused to give any information without the mother's consent, and when summoned as a witness he persisted in this refusal. As both Professor Brandt and the magistrate desired a decision as to the principle which this question involved the mother's consent was not asked. The municipal court rejected Professor Brandt's objection to give information about the child's measurements and weight and the Court of Appeal came to the same conclusion. The Court of Appeal considered that a medical man's responsibility as to professional secrets must limit his duties as a witness both in civil and in criminal cases (Criminal Code, par. 178). This circumstance could not, however, justify Professor Brandt in refusing to give information about the child's measurements and weight. The mother herself had stated that she had given birth to the child at the maternity hospital on a certain date. Information as to the child's measurements and weight could therefore be given without the medical man betraying any confidence thereby. Such information might be also usually of service in throwing light on the child's maturity. To what extent this would give the required information in each case depends on circumstances, but considerations on this score did not allow of a medical man withholding the information required. The possibility of the required information being obtained from other sources could not be excluded should the patient withhold her consent to the evidence of the medical man. The Court of Appeal found, therefore, that Professor Brandt was bound to give information as to the child's measurements and weight. Whether he was bound to answer further questions calculated to throw light on the degree of the child's

maturity would depend on the nature of the questions and on the source from which the required answers were obtainable. Three of the members of the court considered that it was the duty of the police to ask the child's mother whether she intended to withhold her consent, as mentioned, or not; and that the question should have been raised in court only in case her consent had been withheld.

Public Health and Poor Law.

LOCAL GOVERNMENT BOARD.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

Hatfield Rural District.—Dr. Lovell Drage protests against the numerous advertisements of abortifacient medicines which find a place in so many papers and periodicals, and he also condemns the practices of those druggists who are in the habit of selling medicines which may produce abortion. In his view no amount of legislation can effectually deal with this evil so long as women continue to shirk the responsibilities of motherhood. The only remedy which can be of service is, Dr. Drage thinks, the growth of a wholesome public opinion which will stimulate pride in the development of a healthy stock. But if this production of a fine race of children is to advance upon true scientific principles definite selection upon a basis such as that foreshadowed in 1865 by Gregor Mendel's great discovery in heredity would seem to be called for and parents chosen who would be likely to give rise to offspring with desirable physical attributes. There is no doubt that the application of the principles of cattle-breeding to the human species is a matter fraught with very great difficulties, more especially as they seem to take too little note of mental and moral qualities. Still, further study of Mendelism may enable us to use without abusing some of the laws which apparently govern hereditary transmission. The Hatfield rural district council does not seem to view with much favour the Notification of Births Act of 1907, and while refusing to adopt the measure itself it has protested against its adoption by the county council. It also protests against a resolution of the county council in which the clerk was instructed to urge the Local Government Board to promote general legislation whereby midwives might be trained out of imperial funds. In the opinion of the district council there is no more reason for the training of midwives at the public expense than there is for defraying the cost of medical education out of the same funds. Apparently Dr. Drage shares, at least in some degree, these opinions, since he thinks that the Act in question would not seriously diminish the infantile mortality in the district. The system governing the employment of midwives in Germany has, according to Dr. Norman Walker, resulted in a species of "partnership between the worst class of medical men and midwives, for the midwives have practically the direction of medical midwifery practice." We do not quite follow Dr. Drage's reasoning with regard to the Notification of Births Act but it is clear that he holds decided opinions upon the subject.

Maldon Rural District.—The fallacy of attaching importance to local statistics for one year only is well brought out in Dr. J. C. Thresh's current annual report for this district, the three sub-registration divisions of which yielded infantile mortalities of 28, 104, and 74 per 1000 births respectively. When, however, the average for the past ten years is taken the infantile mortality-rates for the same divisions become 82, 91, and 86 respectively. It would be well if more caution were exercised in generalising from the local rates for one year only. An outbreak of diphtheria which occurred in this district during 1907 was attributed to the cartage and deposit of filth from the London outfall sewers, probably some of the solid débris arrested by the screens, but Dr. Thresh does not regard the suspicion as well founded. It may be added that London manure has been held responsible for several outbreaks of diphtheria in different parts of the country, but, so far as we are aware, the evidence has never been of a very convincing character.

Chelmsford Rural District.—In refering to the housing of the people in this district Dr. Thresh reminds his readers of the agitation which was raised a few years ago as to the alleged stringency of the building by-laws and of the manner in which such by-laws operated in preventing the erection of wooden or lath-and-plaster buildings. He points out that although such houses can now be erected but few persons take advantage of the licence and he expresses the opinion that not improbably the whole movement was manipulated by persons anxious for an excuse to avoid the erection of cottages on their estates. This seems to be the conclusion at which other medical officers of health in rural districts have arrived and it is clear that the inhibitive influence of reasonable by-laws has been rather over stated. The fact is the people are becoming too educated in sanitary matters to take over cottages in the building of which the elementary rules of hygiene have been disregarded.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8022 births and 5726 deaths were registered during the week ending Feb. 22nd. The mean annual rate of mortality in these towns, which had been equal to 18·3 and 18·6 per 1000 in the two preceding weeks, decreased again to 18·4 per 1000 in the week under notice. During the first eight weeks of the current quarter the annual death-rate in these towns averaged 18·5 per 1000; the rate in London during the same period did not exceed 18·2 per 1000. The lowest annual death-rates in the 76 towns last week were 8·4 in Hornsey, 11·5 in Hastings, 11·6 in Willesden, and 12·3 in Cardiff; among the other towns the rates ranged upwards to 25·1 in Sunderland and in Newport (Mon.), 27·0 in Merthyr Tydfil, 28·8 in Burnley, and 29·4 in Great Yarmouth. The rate of mortality in London last week was 18·5 per 1000. The 5726 deaths registered in the 76 towns during the week under notice were 72 fewer than the number in the previous week, and included 386 which were referred to the principal epidemic diseases, against 447 and 388 in the two preceding weeks; of these, 170 resulted from whooping-cough, 84 from measles, 52 from diphtheria, 34 from scarlet fever, 30 from diarrhœa, and 16 from "fever" (principally enteric), but not one from small-pox. The deaths from these epidemic diseases in the 76 towns were equal to an annual rate of 1·2 per 1000, the rate from the same diseases in London being 0·9. No death from any of these epidemic diseases was registered last week in Derby, Tottenham, Huddersfield, Coventry, Grimsby, Bournemouth, or Bury; the annual death-rates from these diseases ranged upwards in the other towns to 3·0 in Burnley, 3·7 in Swansea, 3·8 in Hanley, 3·9 in Rhondda, 4·1 in Merthyr Tydfil, and 4·6 in Sunderland. The fatal cases of whooping-cough in the 76 towns, which had been 192 and 154 in the two preceding weeks, rose again to 170 in the week under notice; the highest death-rates from this disease were 2·0 in Sheffield, in Gateshead, and in Newport (Mon.), 2·1 in Swansea, 2·9 in Warrington, 3·4 in Merthyr Tydfil, and 4·3 in Sunderland. The 84 deaths from measles were six in excess of the number in the previous week, and caused death-rates ranging upwards to 1·1 in Hornsey, 1·2 in York, 1·7 in Croydon, 1·8 in Preston, 2·0 in Stockton-on-Tees, and 2·7 in Rhondda. The deaths from diphtheria, which had been 73 and 47 in the two preceeing weeks, rose again to 52 in the week under notice, the greatest proportional mortality from this disease being 1·1 per 1000 in Hornsey and in East Ham. The 34 deaths from scarlet fever were slightly fewer than those recorded in other recent weeks; 14 of these occurred in London and its suburban districts and four in Liverpool. The 16 fatal cases of "fever" were considerably below the number in any previous week of this year; the two deaths in Hanley were equal to a rate of 1·5 per 1000. The number of scarlet fever patients under treatment in the Metropolitan Asylums and London Fever Hospitals, which had steadily declined in the 11 preceding weeks from 5581 to 3806, had further fallen to 3733 on Feb. 22nd; 420 new cases were admitted to these hospitals last week, against 405, 433, and 473 in the three preceding weeks. The deaths in London referred to pneumonia and other diseases of the respiratory organs, which had been 395 and 451 in the two preceding weeks, declined again to 427 in the week under notice, but were 92 in excess of the corrected average number in the corresponding week of the five years 1903–07; the deaths attributed directly to influenza numbered 126, against 32, 34, and 84 in the three preceding weeks. The causes of 54, or 0·9 per cent., of the deaths registered in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were

duly certified in Manchester, Salford, Leeds, Bristol, Hull, and in 47 other smaller towns. The largest number of uncertified deaths were 11 in Birmingham, seven in Sheffield, five in Sunderland, and five in South Shields.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 23·5 and 21·4 per 1000 in the two preceding weeks, rose again to 21·8 per 1000 in the week ending Feb. 22nd, and was 3·4 per 1000 above the mean rate during the same period in the 76 large English towns. Among the eight Scotch towns the death-rates ranged from 16·0 in Greenock and 17·3 in Paisley to 29·6 in Leith and 44·4 in Perth. The 767 deaths in these eight towns showed an increase of 12 over the number in the previous week, and included 92 which were referred to the principal epidemic diseases, against 123, 132, and 114 in the three preceding weeks; of these, 35 resulted from measles, 28 from whooping-cough, 12 from "fever," seven from diphtheria, five from diarrhœa, four from scarlet fever, and one from small-pox. These 92 deaths were equal to an annual rate of 2·6 per 1000, which exceeded by as much as 1·4 the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of measles, which had been 64 and 55 in the two preceding weeks, declined last week to 35, of which all but one were registered in Glasgow. The 28 deaths from whooping-cough, exceeded by 10 the number in the previous week, and included 13 in Glasgow, five in Dundee, five in Leith, two in Edinburgh and two in Greenock. Of the 12 deaths referred to "fever," ten were certified as cerebro-spinal meningitis and two as enteric fever; these ten deaths included five in Glasgow, three in Edinburgh, and one each in Aberdeen and Leith. Two of the seven deaths from diphtheria occurred in Edinburgh; and the four fatal cases of scarlet fever included three in Glasgow. The deaths from diarrhœa, which had been 14 and 18 in the two preceding weeks, declined again last week to five, of which three were recorded in Glasgow. The fatal case of small-pox occurred in Leith. The deaths referred to diseases of the respiratory organs in these eight towns, which had been 171 and 176 in the two preceding weeks, further rose to 194 in the week under notice, and exceeded by 22 the number in the corresponding period of last year. The causes of 30, or 3·9 per cent., of the deaths in these towns last week were not certified or not stated; in the 76 English towns the proportion of uncertified deaths did not exceed 0·9 per cent.

HEALTH OF DUBLIN.

The annual rate of mortality in Dublin, which had been 22·3 and 24·7 per 1000 in the two preceding weeks, further rose to 25·5 per 1000 in the week ending Feb. 22nd. During the first eight weeks of the current quarter the death-rate averaged 26·3 per 1000, the mean rates during the same period being only 18·2 in London and 19·5 in Edinburgh. The 193 deaths of Dublin residents registered last week showed an increase of six over the number in the previous week, and included four which were referred to the principal epidemic diseases, against nine, six, four, and three in the four preceding weeks; these four deaths included three from whooping-cough and one from "fever," but not any from small-pox, measles, scarlet fever, diphtheria, or diarrhœa. These four deaths were equal to an annual rate of 0·5 per 1000, the death-rate last week from the principal epidemic diseases being 0·9 in London and 1·2 in Edinburgh. The 193 deaths from all causes in Dublin last week included 35 of children under one year of age and 44 of persons aged upwards of 60 years; the deaths of infants showed a slight increase, while those of elderly persons were considerably below the number in the preceding week. Three inquest cases and four deaths from violence were registered, and 93, or 48·2 per cent., of the deaths occurred in public institutions. The causes of five, or 2·6 per cent., of the deaths in Dublin last week were not certified; in London the causes of all but two of the 1698 deaths were certified, while in Edinburgh the proportion of uncertified deaths was 3·3 per cent.

VITAL STATISTICS OF LONDON DURING 1907.

IN the accompanying table statistics of sickness and mortality in the City of London and in each of the metropolitan boroughs are summarised for the year 1907. The mortality figures relate to the deaths of persons actually belonging to the various boroughs and are obtained by distributing the deaths occurring in institutions among the several boroughs in which the deceased had previously resided. With regard to the notified cases of infectious diseases it appears that the number of persons reported last year to be suffering from one or other of the nine diseases specified in the table was equal to a rate of 8·6 per 1000 of the population, estimated at 4,758,218 persons in the middle of last year; in the three preceding years the rates had been 6·1, 7·0, and 7·5 per 1000 respectively. Among the various boroughs the rates last year ranged from 4·2 in the City of Westminster, 5·1 in Holborn, 5·3 in Kensington, 5·6 in Hampstead, 5·8 in St. Marylebone, and 6·0 in Chelsea and in Islington, to 11·3 in Woolwich, 11·4 in Poplar, 12·0 in Hackney and in Bermondsey, 14·5 in Bethnal Green, and 14·6 in Stepney. Only eight cases were notified as small-pox in London last year, against 491, 74, and 31 in the three preceding years; of these eight cases two belonged to the City of London, and one each to St. Marylebone, Hampstead, St. Pancras, Shoreditch, and Poplar, while one case occurred within the limits of the Port of London. Scarlet fever showed a greatly increased prevalence last year, 25 925 cases being notified, against 13,438, 19,461, and 20,329 in the three preceding years. Among the various metropolitan boroughs this disease was proportionally most prevalent in Hackney, Shoreditch, Bethnal Green, Stepney, Poplar, Bermondsey, and Woolwich. There were 23,953 scarlet fever patients admitted into the Metropolitan Asylums Hospitals during the year, against 11,629, 17,592, and 18,622 in the three preceding years; the number of cases remaining under treatment at the end of the year was 4956, against 2349, 3410, and 3787 at the end of the three preceding years. Diphtheria showed a slightly increased prevalence last year, 8771 cases of this disease being notified, against 7220, 6482, and 8045 in the three preceding years. The greatest proportional prevalence of this disease occurred in Fulham, Hackney, Stepney, Bermondsey, Wandsworth, Deptford, and Greenwich. The Metropolitan Asylums Hospitals contained 1168 diphtheria patients at the end of last year, against 800, 701, and 995 at the end of the three preceding years; the number of admissions, which had been 5783, 5380, and 6478 in the three preceding years, further rose last year to 7303. Enteric fever was rather less prevalent in 1907 than it had been in other recent years; the number of notified cases of this disease, which had been 1896, 1552, and 1600 in the three preceding years, declined to 1394 in the year under notice. Cases of this disease were proportionally most numerous in Hackney, the City of London, Bethnal Green, Stepney, Poplar, and Southwark. The number of enteric fever patients admitted into the Metropolitan Asylums Hospitals last year was 768, the numbers in the three preceding years having been 1008, 831, and 934; 119 cases remained under treatment at the end of the year, against 159, 78, and 134 at the end of the three preceding years. The greatest proportional prevalence of erysipelas occurred in Hackney, Shoreditch, Bethnal Green, Stepney, Southwark, and Deptford. The 255 cases of puerperal fever notified during the year included 27 belonging to Wandsworth, 23 to Islington, 23 to Lambeth, 19 to Southwark, 16 to Stepney, 16 to Camberwell, 15 to Fulham, 15 to Hackney, 14 to Poplar, and 13 to Battersea. Of the 132 cases of cerebro-spinal meningitis notified since the beginning of March 13 belonged to Lambeth, 11 to Islington, 11 to Poplar, 10 to Southwark, and 10 to Battersea.

During the year under notice 69,268 deaths of persons belonging to London were registered, equal to a rate of 14·6 per 1000, against 16·1, 15·1, and 15·1 in the three preceding years, the average rate for the ten years 1897–1906 being 17·0 per 1000. Among the various metropolitan boroughs the lowest death-rates last year were 9·0 in Hampstead, 11·5 in Stoke Newington and in Lewisham, 12·3 in Wandsworth, 12·5 in Woolwich, and 12·7 in Greenwich; the highest rates were 17·4 in Holborn, 17·5 in Bethnal Green, 18·0 in Southwark, 18·3 in Bermondsey, 18·7 in Finsbury, and 20·5 in Shoreditch. In the western group of boroughs the mean rate was 13·6 per 1000, in the northern 13·9, in the southern 14·1, in the eastern 17·1, and in the central 18·1 per 1000. The deaths from all causes included 6720 which were referred to the principal infectious diseases; of these, 1801 resulted from measles, 644 from scarlet fever, 781 from diphtheria, 1786 from whooping-cough, 194 from enteric fever, four from ill defined pyrexia, and 1510 from diarrhœa, but not any from small-pox or from

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING THE YEAR 1907.

(Specially compiled for THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1907.	NOTIFIED CASES OF INFECTIOUS DISEASE.										DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.										Death-rate from all causes.	Death-rate per 1000 living.	Deaths of Infants under one Year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Total.	Annual rate per 1000 persons living.			
LONDON	4,756,218	8	25,925	8771	5	1314	35	285	4496	132	41,022	8·6	—	1801	644	781	1766	—	194	4	6720	1·42	69,268	14·6	115
West Districts.																									
Paddington	149,979	—	577	169	—	34	1	6	124	—	911	6·1	—	38	13	20	52	—	5	—	42	1·13	2023	13·5	116
Kensington	181,842	—	532	250	—	40	4	2	127	2	957	5·3	—	31	9	24	81	—	6	—	28	1·04	2462	13·7	134
Hammersmith	122,337	—	581	215	—	40	—	7	78	4	825	7·6	—	54	10	18	33	—	6	—	21	1·16	1744	14·3	120
Fulham	166,749	—	668	615	—	58	1	15	130	3	1460	8·9	—	70	14	28	75	—	8	—	83	1·73	2196	13·2	125
Chelsea	74,857	—	219	168	—	21	—	4	44	4	450	6·0	—	42	2	7	25	—	3	—	29	1·44	1117	15·0	129
City of Westminster	172,219	—	418	145	—	61	2	3	102	4	725	4·2	—	19	12	17	26	—	8	—	41	0·72	2240	13·1	111
North Districts.																									
St. Marylebone	127,718	1	435	128	—	31	—	7	134	4	740	5·8	—	18	19	16	44	—	2	—	24	0·97	1912	15·0	68
Hampstead	91,137	1	220	112	—	21	—	3	66	—	513	5·6	—	12	5	7	12	—	2	—	8	0·61	820	9·0	72
St. Pancras	236,763	1	848	349	—	55	1	4	163	5	1446	6·1	—	88	26	20	78	—	4	—	49	1·17	3545	15·0	115
Islington	347,017	—	1216	462	—	95	1	23	254	11	2062	6·0	—	131	22	41	124	—	13	1	102	1·25	4334	14·7	120
Stoke Newington	53,613	—	252	118	—	15	—	2	30	1	418	7·8	—	7	10	7	19	—	3	—	8	1·02	614	11·5	103
Hackney	232,983	—	1608	543	1	108	2	15	311	4	2792	12·0	—	60	43	47	68	—	21	—	80	1·37	3168	13·6	110
Central Districts.																									
Holborn	55,134	—	157	64	1	14	—	1	39	2	278	5·1	—	12	2	10	28	—	2	—	16	1·28	966	17·4	89
Finsbury	96,732	—	505	155	—	23	—	3	109	3	798	8·3	—	49	17	16	52	—	2	—	40	1·63	1808	18·7	111
City of London	20,310	2	97	28	—	9	—	—	15	—	151	7·6	—	1	1	5	7	—	2	—	1	0·65	341	16·8	97
East Districts.																									
Shoreditch	115,662	1	877	223	—	36	—	3	138	6	1284	11·1	—	119	28	20	101	—	6	—	74	3·01	2360	20·5	157
Bethnal Green	120,831	—	1228	290	1	55	—	5	247	8	1894	14·6	—	71	43	18	60	—	7	—	57	1·96	2281	17·5	140
Stepney	308,923	—	3128	761	1	120	10	16	473	9	4608	14·6	—	155	83	93	102	—	21	1	153	1·97	4897	15·9	116
Poplar	171,066	1	1285	260	—	81	—	14	187	11	1639	11·4	—	86	44	60	82	—	11	—	78	2·11	2878	16·9	126
South Districts.																									
Southwark	269,781	—	1275	422	—	80	—	19	256	10	2062	9·9	—	112	35	26	103	—	11	—	101	1·90	3771	18·0	142
Bermondsey	128,263	—	1021	319	—	45	—	5	143	7	1540	12·0	—	62	36	21	55	—	7	—	48	1·71	2338	18·3	124
Lambeth	318,538	—	1478	327	1	54	6	23	225	13	2127	6·7	—	107	40	47	111	—	5	—	62	1·28	4650	14·6	109
Battersea	181,736	—	977	359	—	44	1	13	176	10	1579	8·7	—	69	19	28	68	—	4	—	45	1·34	2404	13·3	117
Wandsworth	281,419	—	1321	636	—	69	1	27	214	3	2271	8·1	—	65	24	40	112	—	11	—	74	1·16	3449	12·3	101
Camberwell	277,069	—	1571	405	—	82	—	16	264	3	2341	8·6	—	122	37	39	118	—	8	—	72	1·43	3830	13·9	117
Deptford	116,510	—	777	318	—	34	6	4	145	2	1286	11·1	—	54	14	25	37	—	6	1	34	1·47	1639	14·1	108
Greenwich	107,222	—	661	257	—	18	—	2	93	1	1032	9·7	—	58	10	18	26	—	5	—	37	1·44	1362	12·7	100
Lewisham	168,532	—	604	302	—	32	—	7	86	1	1032	6·8	—	17	12	18	51	—	1	—	29	0·85	1747	11·5	90
Woolwich	129,336	—	1027	279	—	27	—	6	113	1	1463	11·3	—	72	14	15	37	—	4	1	34	1·37	1616	12·5	112
Port of London	—	1	2	2	—	2	—	—	1	—	8	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup.

typhus fever. These 6720 deaths were equal to a rate of 1·42 per 1000; in the three preceding years the death-rates from these infectious diseases were 2·14, 1·70, and 1·93 per 1000, the average annual rate for the ten years 1897–1906 being 2·21 per 1000. The death-rates last year from these diseases ranged from 0·51 in Hampstead, 0·72 in the City of Westminster, 0·85 in the City of London and in Lewisham, and 0·97 in St. Marylebone, to 1·71 in Bermondsey, 1·73 in Fulham, 1·83 in Finsbury, 1·90 in Southwark, 1·96 in Bethnal Green, 1·97 in Stepney, 2·11 in Poplar, and 3·01 in Shoreditch. The 1801 deaths referred to measles were 300 fewer than the corrected average number in the preceding five years; among the various metropolitan boroughs this disease was proportionally most fatal in Chelsea, Shoreditch, Bethnal Green, Poplar, Southwark, Greenwich, and Woolwich. The 644 fatal cases of scarlet fever exceeded by 160 the annual average number in the five previous years; the greatest proportional mortality from this disease was recorded in Stoke Newington, Hackney, Shoreditch, Bethnal Green, Stepney, Poplar, and Bermondsey. The 781 deaths from diphtheria corresponded with the average number; the highest death-rates from this disease occurred in Fulham, the City of London, Stepney, Poplar, Battersea, and Deptford. The 1786 fatal cases of whooping-cough were 223 in excess of the corrected average number; among the various metropolitan boroughs this disease showed the greatest proportional fatality in Holborn, Finsbury, Shoreditch, Bethnal Green, Poplar, and Southwark. The 198 deaths referred to "fever" were 160 below the average for the five previous years; the highest "fever" death-rates were recorded in Stoke Newington, Hackney, the City of London, Stepney, Poplar, and Deptford. The 1510 fatal cases of diarrhœa were less than half the corrected average number; the greatest proportional mortality from this disease occurred in Fulham, Shoreditch, Stepney, Bethnal Green, Poplar, and Southwark. In conclusion, it may be stated that the aggregate mortality in London last year from these principal infectious diseases was 27 per cent. below the average for the preceding five years.

Infant mortality, measured by the proportion of deaths among children under one year of age to registered births, was equal to 115 per 1000 last year, against 144, 129, and 131 in the three preceding years; the average rate for the ten years 1897–1906 was 147 per 1000. The rates of infant mortality in the year under notice ranged from 68 in St. Marylebone, 72 in Hampstead, 89 in Holborn, 90 in Lewisham, and 97 in the City of London, to 124 in Bermondsey, 125 in Fulham, 126 in Poplar, 129 in Chelsea, 134 in Kensington, 140 in Bethnal Green, 142 in Southwark, and 157 in Shoreditch.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Staff-Surgeon: S. H. Birt to the *President*, additional, for survey of stores at Yarmouth Hospital, temporary. Surgeon: W. G. Edwards to the *Vivid*, additional, to be lent to Plymouth Hospital. Civil Practitioners: C. R. Wood and W. H. Dodd to be Surgeon and Agent at Kingston-on-Sea, at Southwick, and at Cromane respectively.

ARMY MEDICAL SERVICE.

Colonel William L. Chester is placed on retired pay (dated Feb. 17th, 1908).

Lieutenant-Colonel Daniel O'Sullivan, from the Royal Army Medical Corps, to be Colonel, vice W. L. Chester, retired (dated Feb. 17th, 1908).

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel Robert L. Love is placed on retired pay (dated Feb. 19th, 1908).

Lieutenant Alexander D. Fraser is seconded for service under the Colonial Office (dated Feb. 6th, 1908).

Colonel Fitzroy Beresford Maclean, who has been promoted to that rank to fill the vacancy caused by the retirement of Colonel J. F. Williamson, C.B., C.M.G., is at present serving in South Africa. It is understood that Colonel Maclean will succeed Colonel G. D. Bourke, C.B., as administrative medical officer and commanding Royal Army Medical Corps, Devonport District.

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 1st Fifeshire: Hugh Richardson (formerly Lieutenant, Royal Army Medical Corps), to be Surgeon-Lieutenant (dated Dec. 12th, 1907).

Rifle: 1st Volunteer Battalion, The Dorsetshire Regiment: Surgeon-Lieutenant C. P. Allen resigns his commission (dated Jan. 18th, 1908). 1st (Oxford University) Volunteer Battalion, The Oxfordshire Light Infantry: William Duncan Sturrock to be Surgeon-Lieutenant (dated Feb. 1st, 1908).

THE VOLUNTEER AMBULANCE SCHOOL OF INSTRUCTION.

The following is the result of the examination held in London on Jan. 21st for promotion to the rank of Surgeon-Major. The subjects were Organisation and Discipline. 21 candidates from the school presented themselves for examination of whom 17 passed and eight obtained special mention:—Surgeon Captains: H. Stedman, 1st City of London Royal Garrison Artillery (Volunteers); J. Wreford, 1st Northumberland Royal Garrison Artillery (Volunteers) (special mention); A. C. Hartley, 1st Bedford Royal Engineers (Volunteers); E. Gray, 2nd Cheshire Royal Engineers (Volunteers); J. A. Masters, London Division, Electrical Engineers (Volunteers) (special mention); J. J. O'Hagan, 5th Volunteer Battalion, The King's (Liverpool Regiment) (special mention); E. P. A. Mariette, 2nd Volunteer Battalion, The Devonshire Regiment (special mention); C. J. Martin, 4th Volunteer Battalion, The East Surrey Regiment; T. M. Morton, 4th Volunteer Battalion, The East Surrey Regiment; F. J. Warwick, 3rd Volunteer Battalion, The Essex Regiment (special mention); L. T. F. Bryett, 3rd Volunteer Battalion, The Royal West Kent Regiment (special mention); F. R. Miller, 4th Middlesex Volunteer Rifle Corps; C. S. de Segundo, 20th Middlesex Volunteer Rifle Corps; W. A. Malcolm, 21st Middlesex Volunteer Rifle Corps; C. Graham Grant, 24th Middlesex Volunteer Rifle Corps; H. K. Ramsden, 2nd London Volunteer Rifle Corps (special mention); and W. G. Macfee, 4th London Volunteer Infantry Brigade, Bearer Company (special mention).

THE INDIAN FRONTIER EXPEDITION.

The following casualty is reported in a telegram from the Viceroy: "Captain Robert Markham Carter, Indian Medical Service, 36th Jacob's Horse, slightly wounded in left arm on Feb. 20th at Chora."

MALARIAL FEVER IN MAURITIUS.

The *Army and Navy Gazette* of Feb. 22nd contains the following:—

We learn from a correspondent at Mauritius that Major C. H. P. Fowler, an assistant professor at the Royal Army Medical College, London, arrived in that colony some time ago charged with the special duty of thoroughly investigating the cause of the excessive prevalence of malarial fever among the troops of the garrison. Our correspondent remarks: "The necessity for this inquiry has for many years been evident and what surprises most people on the spot is that it has not been set on foot earlier, for the evil has at times operated most injuriously on the health and efficiency of the British soldier, and seems to be in no way reduced by recent attempts made by the military authorities to check its ravages. Major Fowler, we know, has made a careful and attentive study of military hygiene in all its aspects and is being given full freedom of action, as it has now come, wisely, to be recognised that urgent measures are needed to stamp out the evil if possible, or at any rate limit its pernicious effects. All who have done duty in the colony will be interested, no doubt, in learning that after so many years of urgent protest—I do not think I exaggerate in saying this—the War Office has at length been roused to a realisation of the need of something being done to obtain expert opinion with a view to—let us hope—an amelioration of the ravages of a disease which many hold to be attributable to causes of a character which it would be easy to combat."

ROYAL SANITARY INSTITUTE.—A provincial sessional meeting will take place at Blackpool on March 13th and 14th next. The meeting on Friday, March 13th, will be held in the Council Chamber of the Town Hall, when a discussion will take place on "Sewer Ventilation and the Intercepting Trap," to be opened by Dr. Francis J. H. Coutts, medical officer of health of Blackpool, and Mr. J. S. Brodie, the borough engineer and surveyor. They will be followed by seven other speakers, two of whom are medical men. The chair will be taken at 7.30 P.M. by Mr. H. D. Searles Wood, F.R.I.B.A., Chairman of the Council of the Institute. General discussion is invited. Tickets for admission of visitors may be had on application to Dr. F. J. H. Coutts, Public Health Offices, Blackpool, or from the secretary of the Institute in London. On the following day in the morning a visit will be paid to the Blackpool destructor and electricity works and in the afternoon the sea defence works and the infectious diseases hospital will be inspected.

Correspondence.

"Audi alteram partem."

THE HAMPSTEAD GENERAL HOSPITAL.

To the Editor of THE LANCET.

SIR,—It has been suggested to me that it will remove any wrong impression which may exist as to the attitude of the council of this hospital towards the local medical profession if I make it quite clear that there is no intention to withdraw from the medical men of Hampstead the privilege of treating patients in the pay wards of the hospital, including the "contributory beds."

As already alluded to in my letter which you kindly inserted last week, there have been beds available to local medical practitioners from the foundation of the hospital. These have ranged from a charge of 12*s.* per week, the medical fees being by arrangement between the patient and the doctor in attendance. So far is it from being the wish of the council to deprive the medical men of Hampstead and the neighbourhood of this privilege, that in the extension buildings now ready the number of contributory beds is increased to 14 (or 16) and the beds at the higher rate to six. I may say that the council has never had any intention of discontinuing this arrangement so long as there was a demand for these beds and they will not be unwilling to increase the number of contributory beds if necessary.

I have the pleasure to add that at their meeting last evening the council unanimously agreed to recommend for inclusion in the council on its re-election at the annual meeting of subscribers each year two medical practitioners to represent the medical profession in the district served by the hospital, in addition to the medical members representing the staff of the hospital.

I am, Sir, yours faithfully,

ERNEST COLLINS,
Chairman of the Council, Hampstead General Hospital.

Feb. 26th, 1908.

To the Editor of THE LANCET.

SIR,—Having been on the active staff of the Hampstead General Hospital almost since its foundation in 1882, will you permit me to state once again very briefly the policy which we have hitherto pursued and the reasons which have led to our resignation.

The hospital was founded by the late Dr. W. Heath Strange, a much esteemed practitioner in this neighbourhood, and from the commencement the acting medical staff consisted exclusively of general practitioners, the consulting staff consisting of Mr. Edmund Owen, of St. Mary's Hospital, and Dr. (afterwards Sir) J. Russell Reynolds, the President of the Royal College of Physicians of London. The council, or board of management, of the hospital were all introduced by one or other of the members of the medical staff. The funds of the hospital were collected by the medical officers and their friends, a task involving much self-denial, as can readily be understood when private patients had to be solicited to extricate the hospital from its financial difficulties. On several occasions the hospital passed through financial crises, but the founder was always equal to the emergency and would call together a new council and out of the ruins of the old established a new board of management. From its inception the hospital has been a local institution. In its articles of association the objects of the hospital are stated to be for the benefit of the sick poor of Hampstead and Highgate and the immediate neighbourhood. With this object it was founded and for this purpose the necessary funds have been collected from its local friends and supporters. The by-laws of the institution were in the first instance compiled by one of the members of the medical staff. The hospital accommodation was found to be inadequate and the hospital, which then occupied five houses in South Hill Park, was removed to the present commodious institution on Haverstock Hill two and a half years ago. Here the medical staff supervised all the medical and surgical and nursing arrangements, which were necessarily elaborated on a much larger scale, and much time and thought were given to perfecting the institution and the nursing staff. The proposal to amalgamate with the Kentish Town Hospital, put forward by the King's Fund, was discussed by a joint committee, consisting of two members from the staff of both hospitals, with a like number of the local branch of the British Medical Association.

As a member of this joint committee I may state that although we passed a resolution approving of the *principles* of amalgamation on account of the benefit it would confer to an increased number of the sick poor, we did not approve of the *terms* of amalgamation, as put forward by the King's Fund, which we afterwards heard would include (1) exclusion of the local practitioners for ever from eligibility to the acting staff of the hospital; (2) ineligibility of the junior members of the staff when vacancies should occur on the senior staff—contrary to the usage of all hospitals, and surely an act of injustice to men who had faithfully fulfilled the irksome duties of out-patient practice from the time of their appointment, 18 months ago, with the hope of eventual promotion always before their eyes. Consequently, when the amalgamation scheme was put to the council the medical staff emphatically protested against it unless the King's Fund were willing to modify their conditions, and when put to the vote unanimously decided to stand out as a protest, although declining to vote against it owing to the urgent appeal of the chairman not to divide the council. It is hardly correct therefore to state, as was done in the letter of our chairman, Mr. Ernest Collins, in your last week's issue, that "these terms were accepted as satisfactory by the members of the existing staff, except as regards a clause relating to the two junior members of the staff."

After further negotiations with the King's Fund, with a view to their modifying the terms of their suggested scheme, the amalgamation scheme was put to the council and carried, against the wishes of the medical staff, by a *majority of one*, and a member of the medical staff gave notice that he would forthwith requisition a meeting of the subscribers to consider the question as to whether the acting staff of the hospital should consist as heretofore of local practitioners or of consultants. This meeting took place, as reported in your paper, and although no show of hands was taken there can be no doubt as to the overwhelming majority in the room on that occasion of the supporters of the policy of retaining the local character of the hospital. A compromise was, however, suggested and with this end in view a special committee of five men who were considered to be impartial was appointed. After much careful consideration and having interviewed all parties interested the committee gave their report at an adjourned meeting of the subscribers hastily summoned. The report was a great disappointment. It was in no sense a compromise. It was merely a recommendation to adopt the policy of the half of the council in favour of amalgamation and revision of the constitution. This recommendation of the committee was then put to the meeting which, by a large majority, declined to accept it.

In accordance with the usual procedure, however, a poll was then demanded by one of the members in favour of amalgamation. A very elaborate and highly perplexing paper was issued and three days' interval allowed for recording of the poll—which interval was generally conceded to be far too short. The result of the poll, however, was that out of 400 votes there was a majority of 8 in favour of amalgamation. With this small majority of subscribers, backed by a still smaller majority on the council, the amalgamation scheme has been carried and adopted. As stated in the chairman's letter of last week, when canvassed by circular only 80 of the local practitioners sent in replies, and of these only half were in favour of the hospital being staffed by local practitioners. The reason of this was stated at a meeting held shortly afterwards at the Hampstead Conservatoire at which over 80 practitioners were present. When asked why so few had replied to the circular the reply was that they had not known what were the points at issue, and, again, the majority had waited to send in their reply until after the meeting at the Conservatoire. As stated before, a *unanimous resolution* was passed at this meeting in favour of local practitioners continuing to staff the hospital.

In December last the local practitioners were again circularised by the British Medical Association and an overwhelming majority—68 per cent. of those practising in the neighbourhood—were in favour of the local practitioners serving on the staff of the hospital. It was therefore decided that a warning notice against accepting a post on the hospital staff under the present conditions should be inserted both in THE LANCET and in the *British Medical Journal*. In view

of this attitude of the British Medical Association and of the local practitioners as a body and of the warning notice of the medical journals the medical staff of the hospital held a meeting at which it was unanimously decided that the whole staff resign.

In conclusion, I would again emphasise the facts (1) that the staff of the Hampstead General Hospital resigned on a matter of principle; (2) that we took this step in deference to the wishes of the British Medical Association and of the local practitioners of the neighbourhood; (3) that after being associated so long with this institution, having been present at its birth, having watched its evolution and growth with increasing pleasure and pride, and having guided it into its present state of maturity, we have not resigned our posts on the staff lightly.

Lastly, is it too much to express the hope that the leaders of the profession will stand shoulder-to-shoulder with the general practitioners in this struggle, and will demonstrate once more, as was done at Bristol, that we are all brethren?

I am, Sir, yours faithfully,

AUGUSTUS H. COOK,
Senior Surgeon, Hampstead General Hospital.

Hampstead, Feb. 24th, 1908.

RECEPTION HOUSES FOR RECENT CASES OF INSANITY.

To the Editor of THE LANCET.

SIR,—I am sorry your correspondent, "A Medical Superintendent, County Asylum (England)," writes anonymously, as in general I do not care to reply to such communications. There are some points, however, raised by your correspondent which show that he has not grasped the substance of my communication. This may be due to a want of lucidity on my part, but the contention of my paper was that it is quite possible to treat all classes of recent admissions to asylums under exactly similar conditions to those that prevail in general hospitals, without seclusion and restraint. I was not aware that about 90 per cent. of the English asylums have carried out the methods suggested in my paper, but my error is excusable in view of the fact that several medical superintendents of English county asylums, members of the London County Council, and other English county councils, who have visited the reception house at Woodilee, were not conversant with any similar mode of dealing with recent admissions. Perhaps your correspondent will emerge from his anonymity and give the name of some of the places where he knows the system spoken of is in vogue.

In regard to your correspondent's remarks about the doors being locked at night, I may say in this connexion that there would be no objection to the doors being unlocked at night so far as the nursing and the care of the patients are concerned, but doors are locked on the same principle on which the medical superintendent of a county asylum locks the doors of his own house at night.

I sympathise with the attitude of your correspondent with regard to female nurses being in charge of the male hospital. I had the same views as he now holds, previous to the introduction of such nursing into this institution, and after a short trial of female nurses I thought my primary views were to be confirmed. A subsequent and more efficient trial has convinced me of the value of female nurses in the hospital for male patients. Is there something so radically different in mental disease as to demand a different system of nursing to that of general bodily disease? There are no male nurses, as far as I know, in general hospitals.

Your correspondent's reference to the recovery-rate at Woodilee Asylum is not a happy one. During the seven years I have been superintendent of this institution there has been an average recovery-rate of 37 per cent. on the admissions. This average, as far as I am aware, does not fall far below the usual. I assume that your correspondent's reason for bringing forward the recovery-rate is that in view of the conditions under which newly admitted patients are treated there ought to be a larger recovery-rate. Perhaps your correspondent is not aware of local conditions which influence the recovery-rate of this institution. In Glasgow we have mental wards in which temporary cases of insanity (which swell recovery-rates), such as cases of delirium tremens and doubtful cases of illness, are treated to a conclusion. Secondly, we have in this asylum a home for imbecile children, and there has been during recent years a comparatively large number of children admitted annually who, as they are all included in the admission numbers, adversely affect the recovery-rate. If there is any other point that your correspondent would like information on I will be very glad to afford it him.

I am, Sir, yours faithfully,

HAMILTON C. MARR.

Glasgow District Asylum, Woodilee, Feb. 25th, 1908.

ANÆSTHESIA AND ITS MORTALITY.

To the Editor of THE LANCET.

SIR,—I am asked by "G. H. R. D." to explain a statement which I made at the last meeting of the Medico-Legal Society. It is quite true that I there pleaded for a more thorough instruction in the administration of anæsthetics as a prelude to a reduction in the present regrettably high death-rate from these agents. So far as I am able to follow his arguments, "G. H. R. D." contends that if my thesis is correct we should expect to find a lower death-rate at those hospitals at which instruction is most thorough. Up to this point I fully agree with him—in fact, it would not, I think, be difficult to prove this contention. But when he states that the mortality from anæsthetics is lower in provincial, Scotch, and Irish hospitals than in our London hospitals I confess I cannot follow him. I am sure there are other readers of THE LANCET besides myself who would be glad to know how he has arrived at the data upon which he has based this statement. I take it he is aware that there are no coroners' inquests in Scotland—a fact which has for many years stood in the way of any comparison between the respective anæsthetic death-rates of England and Scotland. But even if "G. H. R. D." were able to bring forward statistics in support of his statement I very much question whether such statistics would satisfy the profession, for there is, perhaps, no question before us at the present time concerning which statistics are more likely to be fallacious than that under consideration. It seems to me that if deaths during anæsthesia are to be reduced in number—and I maintain that such an achievement is perfectly practicable—this can only be done by increasing and disseminating the knowledge we already possess of the clinical and physiological action of these substances; by placing their administration at our hospitals in the hands of experienced and specially appointed officers; and by exerting all the means in our power to prevent inexperienced and unqualified persons, outside our hospitals, from employing drugs with whose properties they are not sufficiently familiar.—I am, Sir, yours faithfully,

FREDERIC HEWITT.

To the Editor of THE LANCET.

SIR,—As I am to some extent responsible for the teaching of anæsthetics in the Edinburgh Medical School and for the methods employed by those who give the anæsthetics, I may be permitted to, so far as may be, reply to "G. H. R. D.'s" query in your issue of Feb. 22nd. As to the use of a towel Dr. D. is under a misapprehension—or his informant is. The use of the towel for the administration of chloroform in an Edinburgh hospital is now unusual. Schimmelbusch's mask is most commonly employed for pure $CHCl_3$, with one or two layers of lint. I prefer two myself. For mixtures—C E. and C_2E_2—a metal cone (modified from Black's) is frequently employed. In many theatres Clover or Hewitt is used from time to time for ether, frequently preceded by ethyl chloride, while latterly the open method of etherisation has got a foothold, and my colleague Dr. D. C. A. McAllum, I believe, frequently employs it. The methods and anæsthetics employed are therefore varied; probably chloroform is given most frequently. In private practice the custom varies with the seniority and conservatism of the individual doctor.

From knowledge I can say that of late years the mortality in hospitals in Edinburgh has been very low and comparatively few cases have come under notice in private practice, owing, I think, largely to the disrepute into which chloroform has fallen in dental work. As to why the mortality is so low in Edinburgh just now and why it is so amazingly high in some hospitals and districts of the metropolis it is impossible to venture an opinion even. The figures given by Mr. Troutbeck at a recent meeting of the Medico-Legal Society are startling.

We cannot claim for one moment that anæsthetic teaching is more carefully or systematically carried out in Scotland than in London or that anything more than care and

common sense with a varying amount of experience is employed, but the results remain. It is certainly not due to dosimetric apparatus, which have found little favour in the north.—I am, Sir, yours faithfully,

T. D. LUKE,
Lecturer on Anæsthetics, University of Edinburgh.

Edinburgh, Feb. 24th, 1908.

To the Editor of THE LANCET.

SIR,—Under the above heading a correspondent who signs himself "G. H. R. D." makes some brief remarks in THE LANCET of Feb. 22nd, p. 597, regarding the teaching of anæsthetics and he asks the question, "Is the special instruction there [Edinburgh] more thorough than here [London]?" As an Edinburgh graduate perhaps I may be permitted to say something in the matter. At the time when I qualified—about five years ago—there was no compulsory course in anæsthetic work. There was a purely optional course. The course consisted of four systematic lectures on the theory of anæsthesia and a practical demonstration of the ways of giving anæsthetics. Those who attended the course were expected to undertake the giving of anæsthetics on ten occasions under skilled supervision. The course being optional was not attended by everyone and I know for a fact that several men who graduated with me had never given an anæsthetic. Previous to the date of the starting of this optional course probably 50 per cent. of graduates had never given an anæsthetic when they obtained their degrees.

The authorities at Edinburgh have now recognised the importance of teaching this branch of work and a compulsory course has now been instituted. This consists of systematic lectures, practical demonstrations, and personal giving of anæsthetics on a certain number of occasions (20 I believe) under skilled supervision. There can be no doubt that this was a much-needed reform, because anæsthetic administration cannot be learned by simply seeing an anæsthetic given. Practical experience is necessary and everyone before qualifying should be compelled to have practical training. When I was a student at Edinburgh the chloroform was given from a towel, but whether that method of administration is still in vogue or not I do not know.

I am, Sir, yours faithfully,

Feb. 22nd, 1908. M.B. EDIN.

THE PRESENT PROSPECTS OF THE MEDICAL PROFESSION.

To the Editor of THE LANCET.

SIR,—I notice in THE LANCET of Feb. 22nd a letter from Dr. F. W. Forbes-Ross in which he says that in his practice when he has to operate for the patient of a general practitioner who is not a skilled anæsthetist he asks him to be present at the operation and "for his services gives him 'down on the nail' a third of the fee agreed upon for the operation, for he has earned it."

I should like to know how this differs from the system which in France has a very evil name and is there known as "dichotomy"? It has been universally condemned by organised medical opinion in France and its corrupt results were exposed some years ago in Gyp's tale, "Le Docteur Tant Pour Cent." We may approve of the attendance of the family practitioner and of his being paid a fee, but it ought to be paid by the patient and not by the surgeon. If it is paid by the surgeon it must indirectly come out of the pocket of the patient as it will be sure to be considered by the former in fixing his fee, and although in the case of a minor operation two or three guineas may be no excessive payment for the attendance of the family practitioner, in a major operation a third of a hundred guineas would be out of proportion to the services rendered. In France the system has been condemned because it is admitted that the payment of such large sums to the family practitioner is opposed to the interests of the patient.

In the lectures given in Paris in 1899 by M. G. Lepage and M. P. le Gendre they quote the following from an edition of Baedeker's "Guide to Paris": "It is averred that owing to the facility with which they can be performed many doctors willingly advise a number of more or less necessary operations and recommend the services of colleagues who demand enormous fees, of which they receive a considerable part," and they do this to indicate how the system exposes the medical profession to a grave imputation upon its honour. Up to the present I had believed that it did not exist in England, but as it is dangerous to the public as well as to the profession and offers such serious temptations it should be nipped in the bud. It may be advocated as justice to the general practitioner, but it means dishonour to the medical profession. I am, Sir, yours faithfully,

Birmingham, Feb. 22nd, 1908. ROBERT SAUNDBY.

NOTIFICATION OF BIRTHS ACT.

To the Editor of THE LANCET.

SIR,—The promoters of this Act were inspired by good intentions, but its provisions will not accomplish their objects. The storm of opposition in the medical profession that has been excited renders it very unlikely that it can be efficiently administered. There is, indeed, much in the Act that calls for amendment. The duplex nature of the duties imposed on the parent or guardian who is called on (1) to notify the medical officer of health and (2) to register the birth is likely to interfere seriously with the important work of registration. Mr. Dudman, the registrar of births for St. Marylebone, has pointed this out, and owing to the migratory character of large sections of our population his apprehensions are well founded. The best solution of the problem would be to direct (1) that registration by the parent or guardian within 36 hours of the birth of the child should be compulsory; (2) that on the day of registration the registrar should notify the medical officer of health of the district; and (3) that medical men should not be compelled to divulge professional secrets.

Were these amendments embodied in an Act the medical officer of health would receive early information, whilst the sense of injustice now felt by the medical profession would disappear, and their loyal assistance in the preservation of life would be as zealous in the future as it has been in the past. I am, Sir, yours faithfully,

JOHN FLETCHER LITTLE,
Harley-street, W., Feb. 22nd, 1908. Medical Officer of Health.

THE SHRINE OF ASKLEPIOS AT MOUDANIA.

To the Editor of THE LANCET.

SIR,—Readers of an archæological turn of mind who noticed your annotation in THE LANCET of Dec. 21st, 1907, on this subject will be interested to learn that a further monument of medical interest has been discovered by M. Jean Gaetano on the same site. This is about 35 inches by 10 inches and bears an inscription which has been elucidated for me by the kindness of Canon E. L. Hicks. The inscription records that a certain physician, who had been sick or in some other peril, had made a vow to Asklepios, and being delivered paid thus his vow. It runs:—

"Caius Julius Chrestus
physician, to Asklepios
that dwells in the canal
on his own behalf
on account of a vow."

Canon Hicks tells me that Chrestus corresponds to the Latin Probus and that the physician was a Roman citizen having the "tria nomina." He may have received his "civitas" from Julius Cæsar, perhaps in common with others of his native town, perhaps in return for professional services. More likely by far, however, he was the descendant of an earlier man of the same name in whom the family had received its civitas, as physicians seldom rose above the rank of "libertini" in the Roman Empire. The date is probably about 50 A.D., and I felt that some notice should be taken of the discovery of the record of the piety of a distinguished practitioner who for so many centuries has been among the great number of those "of whom there is no remembrance."

I am, Sir, yours faithfully,

Highbury, Feb. 18th, 1908. J. ALISON GLOVER.

OPEN WINDOWS AND ADENOIDS.

To the Editor of THE LANCET.

SIR,—Some time ago it occurred to me that the cold damp air of our winter nights might have some effect in causing adenoids. I consequently tried to find out how children brought up with open windows at night compared with those children who slept with closed windows. I found two cases of adenoids among 62 who had slept with closed windows and 16 cases of adenoids among 34 who had slept with the windows open. I am not altogether satisfied with these figures, however, as I found it difficult to get many children of this last generation who slept with closed windows, and

the closed window cases refer chiefly to last generation. Thus these figures might also to a great extent be said to show that adenoids were rare a generation ago and very common at the present day. Whether there have been other changes which might account for the apparently great increase in the prevalence of adenoids is a point to be considered; but it certainly seems very desirable that an investigation should be made into the proportion of children affected with adenoids at the present day and a similar investigation into the proportion of those who suffered from the disease, say, 30 or 40 years ago. This latter could no doubt be arrived at from the history of the cases, the shape of the palate, and the arrangement of the teeth. The necessary information could at least be more satisfactorily got if such an investigation were made at once. It would be wasting a good opportunity to wait till skeletal evidence was our only data to go upon.

I am, Sir, yours faithfully,

Wimpole-street, W., Feb. 22nd, 1908. J. SIM WALLACE.

THE LOCKING OF MILK CHURNS.

To the Editor of THE LANCET.

SIR,—In reference to your annotation in your issue of Feb. 22nd on the above subject I beg to inclose for your information a copy of the contract which every farmer who supplies milk to the Aylesbury Dairy Company is required to sign and from which you will see that every churn of milk has to be sealed, that for this purpose the company provide the necessary seals and sealing pliers, and that milk received in a churn not securely sealed is made into butter and paid for accordingly. This practice has been in operation for the past 20 years at least.—I am, Sir, yours faithfully,

J. A. HATTERSLEY, Managing Director.

Aylesbury Dairy Co., Limited,
St. Petersburgh-place, Bayswater, London, W.,
Feb. 22nd, 1908.

*** The sixth clause of the contract signed between the Aylesbury Dairy Company and the contractors for cows' milk runs as follows:—

6. Every churn of milk to be sealed, and for this purpose the company to provide the necessary seals and sealing pliers, which are to be returned to them on the expiration of the contract, or at an earlier period if demanded by the company. Milk received in a churn which has not been securely sealed will be made into butter, and paid for according to market price of butter.

This is a very proper clause and one which we should like to see enforced by all other agents in the distribution of milk, for there can be no denying that a great quantity of milk reaches London in unsealed cans. At the beginning of last year we published a short series of articles from a correspondent in which he detailed his personal observations upon the railway transport of milk. In the course of his articles his remark that he had seen cans containing milk upon various London platforms with their lids unfastened and partly open became monotonously frequent.—ED. L.

DIPHTHERIA OF THE SKIN.

To the Editor of THE LANCET.

SIR,—In reference to the two remarkable cases of diphtheria of the skin with vesicular or ecthymatous lesions recorded by Dr. Alan B. Slater (THE LANCET, Jan. 4th, p. 15) and by Dr. A. Eddowes (THE LANCET, Feb. 1st, p. 282) it is interesting to recall two similar cases reported by Labbé and Demarque (Impetigo and Ecthyma due to Bacillus of Diphtheria, *Rev. Mens. des Mal. de l'Enfance*, February, 1904, p. 49), and a case recorded by Schucht (Dermatitis due to true Diphtheria Bacillus, Case 4, "with the clinical picture of infantile ecthyma," *Archiv f. Derm. u. Syph., Neisser's Festschrift*, 1907, p. 105).

I am, Sir, yours faithfully,

Weymouth-street, W., Feb. 18th, 1908. H. G. ADAMSON.

THE SUPPLY OF PURE MILK TO HOSPITALS.

To the Editor of THE LANCET.

SIR,—I have been greatly interested in the report of the committee on the supply of milk to the London hospitals. Perhaps it will be best if I say at once that I am in active practice in Lincolnshire and also a partner in a fairly large farming business with a dairy of between 60 and 70 cows in the South of England. I can therefore look at this question both from the medical and agricultural point of view. I should like to point out that the conditions of the first clause as to the percentage of butter fat are at some times and in certain seasons quite impossible to carry out. I will also try to prove that even the attempt to carry out the conditions will render the milk a source of danger to a certain number of young children.

Some two or three years ago during the months of April, May, and half of June, we could not possibly obtain a yield of 3 per cent. from the cows on the farm mentioned above and we found that every other dairy farm in that district complained of the same thing. Some time before this I inspected the cows, buildings, &c., and was satisfied as to the health and condition of the cows, but to make doubly sure I suggested a visit from the medical officer of health of the large town where the milk is consumed. He reported the cows to be most healthy and everything carried out under the very best conditions. The grass land on which the cows feed is of good quality, in fact, far above average dairy land. The weather was very cold and sunless, so that the best grasses did not come until the third week in June. During this period, from April to June, the milk was tested daily with the result that during the whole time the fats were nearly always below 3 per cent. Many experts were appealed to for the cause and remedy, amongst others the Royal Agricultural Society; they all advised an increase of albuminous foods. This, of course, had been done all the time, they having as much best cotton cake, oats, and beans as they would eat, these being the usual foods for the purpose. Singularly, the cows that were the greatest offenders had only been in milk about a month or six weeks. The same cows during the months of October and November of that year, and on the same land without any artificial food, yielded 6 per cent. of fats at every milking. So much for the agricultural side of the question; now for the medical. Nearly all farmers who regularly breed and rear calves are quite conversant with the fact that if they give a cow an excess of albuminous food whilst the calf is sucking almost certain death of the calf follows, and that quickly, from "skate" or violent diarrhœa which has a most peculiarly offensive smell. I have received direct evidence of this from farmers in Devon, Sussex, Northants, and Lincolnshire. I have also most conclusive evidence that this milk will have the same effect on some infants. I will give two cases from many that have come under my personal observation during the past year or two. Case 1: A lady with her infant, in perfect health, came to stay on the above farm during the time the cows were giving less than 3 per cent. of fats. My partner, the farmer, said, "If the baby takes this milk she will have diarrhœa in 24 hours." The infant had the milk and it was followed by the diarrhœa in less than 48 hours, the motion having the same peculiar smell as the calf's has. Case 2: I casually asked a farmer what his 15-months old boy had been fed on; he replied, "The milk from a thoroughly healthy young cow." Then he volunteered the fact that when the child was six months old he gave the cow some cotton cake, baby at once getting diarrhœa; he stopped cotton cake and the diarrhœa ceased.

The two cases led me to investigate many attacks of diarrhœa in infants and I am convinced the above is frequently the cause. It can be diagnosed by the peculiar odour and cured by stopping the milk. I am anxious to find what it is in the milk that causes this trouble and should be glad to hear from any of your readers if they have had a similar experience as myself. It seems to me there must be a ptomaine in the milk, which is almost certain death to the calf and only acts spasmodically on the infant.

One final remark on the committee's report for the hospitals. Why not insist on the cows being milked by a milking machine, the milk entering a hermetically sealed vessel direct from the cows and so avoid dirty hands, &c.? We have adopted this course and so far we are more than pleased with the result from both the farming and sanitary point of view.

I am, Sir, yours faithfully,

Feb. 25th, 1908. M.R.C.S., L.R.C.P.

ERRATUM.—In Dr. Harry Campbell's letter published in the last issue of THE LANCET the word "respiration" occurring in the ninth line should be "expiration."

CHOLERA IN THE PILGRIMAGE AND ELSEWHERE.

(BY THE BRITISH DELEGATE ON THE CONSTANTINOPLE BOARD OF HEALTH.)

THE record of the cholera outbreak in the Hedjaz since the time of writing my last letter[1] has fortunately been that of a steadily declining epidemic. In Mecca the following deaths from cholera have been registered since Jan. 21st:—

Jan. 21st	... ...	186 deaths	
,, 22nd	... ...	168	,,
,, 23rd	... ...	117	,,
,, 24th	... ...	64	,,
,, 25th	... ...	49	,,
,, 26th	... ...	Bulletin missing.	
,, 27th	... ...	25 deaths	
,, 28th	... ...	18	,,
,, 29th	... ...	25	,,
Jan. 30th	... ...	21 deaths	
,, 31st	... ...	17	,,
Feb. 1st	... ...	14	,,
,, 2nd	... ...	9	,,
,, 3rd	... ...	9	,,
,, 4th	... ...	4	,,
,, 5th	... ...	3	,,
,, 6th	... ...	4	,,
,, 7th	... ...	4	,,
,, 8th	... ...	0	,,

Since Feb. 8th there appear to have been no further deaths from cholera in Mecca and on the 10th it was announced that the issue of daily bulletins would henceforth cease unless fresh cases should occur. The marked diminution in the number of deaths there, ending, it may be hoped, in the extinction of the epidemic, has coincided with the dispersal of the pilgrims. Few, if any, hajjis are now left in Mecca itself. The great Mahmel caravan for Medina and Damascus left there on Jan. 31st; it consisted of 7000 camels and was accompanied by an ambulance and a number of medical men. The report of its arrival at Medina may now be expected at any moment.

In Medina there appear to have been no fresh cases of cholera since Jan. 15th. In Jeddah there was a sharp rise in the numbers of cases and deaths, coinciding with the return of the pilgrims from Mecca, as the following returns show:—

From Jan. 10th to Jan. 19th	... ...	4 cases,	3 deaths.
,, ,, 20th ,, ,, 26th	... ...	250 ,,	219 ,,
,, ,, 27th ,, Feb. 2nd	... ...	113 ,,	95 ,,
,, Feb. 3rd ,, ,, 8th	... ...	15 ,,	25 ,,

From Yanbo news has been received very irregularly. It seems, however, that the disease had not died out there as had been supposed. Between Jan. 3rd and 27th, 26 cases of cholera with 25 deaths occurred there; and between Jan. 28th and Feb. 3rd, 18 cases and 18 deaths. Some of the later cases appear to have occurred among pilgrims arriving at Yanbo from Jeddah by sea.

The marked subsidence of the cholera outbreak at Jeddah is mainly to be attributed to the rapid departure of the pilgrims from that port, some for Yanbo, some for the south and countries situated beyond the Straits of Bab-el-Mandeb, and the rest for the Suez Canal and the north. Whether it was solely due to this cause or whether it was not also partly due to a real decline in the activity of the infecting material, it is impossible to say. It is nevertheless remarkable that among the many thousands of pilgrims who have already arrived at the Egyptian lazaret of El Tor only three cases of cholera (bacteriologically proved) have so far been observed. Two of these cases were from the s.s. *Mariout* and one was from the s.s. *Tigre*. Other ships seem to have had suspicious deaths among their pilgrims during the voyage from Jeddah, and some have landed suspicious cases at the Tor lazaret; but, as just stated, in only three has the existence of cholera been actually proved. A rumour was recently current here that cholera had broken out in the Keneh province of Egypt, but this has fortunately been shown to be entirely without foundation.

As pointed out in my last letter, the newly constructed Hedjaz railway will this year be made use of by a large number of pilgrims returning northwards; and the risk of the importation of cholera to Syria has been proportionately increased. The disease has already reached the head of the line and attacked some of the soldiers employed on the works. Information from these rather remote regions has been scanty and contradictory, but the following summary seems to represent as accurately as possible what has actually occurred there. When the Mahmel caravan (with the holy carpet) was on its way down to Medina and Mecca early in January (or late in December), Arabs from Medina, coming along the pilgrims' road to meet it, brought with them the infection of cholera and communicated it to the troops at a place called Hedieh. A telegram from Nazim Pasha, director-general of the railway construction works, dated Jan. 7th, stated that over 30 cases of cholera and 10 deaths had occurred among the troops under his orders in Medina. These troops had, it was added, been camped outside the town in separate groups; it was further added that over 30 cases and 24 deaths had been registered in the second company of the railway battalion stationed beyond Hedieh, followed (on Jan. 4th) by six deaths and 17 suspected cases in the same company. Then it was reported that a case had been seen at El Ola, about 100 miles north of Hedieh; this case recovered and a telegram dated Jan. 19th stated that no new case had been seen there for 11 days. Another telegram stated that at no time had cholera been seen at any point of the line between Damascus and Bir-ul-jedid, but this is in contradiction with the report of the case at El Ola, which is well to the north of Bir-ul-jedid. On Jan. 21st Dr. Selami Pasha, head of the special medical mission sent from Constantinople for the sanitary control of the line, telegraphed from Damascus that the disease had reached the 1074th kilometre. This apparently corresponds with the position of Bir-ul jedid or is perhaps slightly to the north of that place; 191 cases of cholera were said to have been seen altogether, besides 19 others, with three deaths, among the soldiers. Later, however, the occurrence of "191 cases" was absolutely contradicted. A series of telegrams were sent off by the same authority between Jan. 25th and Feb. 2nd, from which the following may be gathered. On Jan. 25th it was stated that the whole of the line south of El Ola was considered to be contaminated. On Jan. 26th a telegram from Zumrud stated that Dr. Selami Pasha had gone there to make a personal inquiry as the news obtainable had been so contradictory. Zumrud was then considered to be the terminus of the line; it lies between El Ola and Bir-ul-Jedid. The telegram continued to the effect that no case of cholera had been seen at Hedieh for four days, that one fatal case had occurred at the 1074th kilometre, and that the military authorities had informed him verbally that further south sporadic cases had occurred at many points. On the 28th Dr. Selami Pasha telegraphed from Medaini-Salih, the station north of El Ola, stating that between Jan. 15th and 26th there had been 42 cases and 16 deaths around and beyond Bir-ul-jedid and Hedieh, and that a quarantine station had been established at Bir-ul-jedid where ordinary passengers (not pilgrims) were subjected to ten days' quarantine. A large supply of permanganate of potassium had been distributed there and elsewhere for the disinfection of wells and other water-supplies. The quarantine station for pilgrims had been established at Medaini-Salih. The telegram of Jan. 29th definitely contradicted the former report of "191 cases," and stated that the disease had advanced only as far north as kilometre No. 1071½, where it existed among labourers on the line. Further north the line was declared to be quite free from infection. Later telegrams continue to report the occurrence of a few cases and deaths among the labourers and troops at Hedieh, Bir-ul-jedid, and elsewhere.

From the above summary it may be concluded that, so far as is known at present, cholera has not spread along the Hedjaz railway beyond El Ola, which is roughly about 300 kilometres north of Medina; but that at and beyond Bir-ul-jedid and Hedieh it has been more or less epidemic particularly among labourers and troops employed on the construction of the line.

The pilgrims' quarantine station has, as just stated, been established at Medaini-Salih. A detailed scheme of measures in connexion with the return of the hajjis by this route has been put into force, but any account of it must be reserved for a later letter.

The nine cases of cholera in Constantinople, which were mentioned in my last letter, were followed by two others, isolated respectively on Jan. 23rd and 28th. Since the last-named date no further case has been observed, and it is hoped that the sporadic outbreak is over. All measures imposed on departures from this city and on arrivals therefrom in other Turkish ports have been suppressed.

In Russia the cholera epidemic appears to have come to an end. The figures published in my last letter brought the record of the epidemic down to Dec. 18th (31st). From Dec. 19th (Jan. 1st) to Dec. 25th (Jan. 7th) no new case

[1] Published in THE LANCET of Feb. 8th, 1908, p. 455.

was reported; in the following week, ending Jan. 1st (14th), two cases were reported from the Tomsk government in Siberia and none from any other part of the empire. Since that date the whole of the Russian Empire is declared to have been quite free from cholera.

Constantinople, Feb. 13th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Royal Southern Hospital: Tropical Diseases.

THE income of this charity for the past year was £10,177, whilst the expenditure was £12,809, leaving a deficit of £2632. During 1907 the number of cases in the tropical diseases ward was less than usual. The individual cases amounted to 108. The nationalities of the patients were: English, 80; Irish, 11; Scotch, 5; Norwegian, 3; Bohemian, 2; East Indian, 2; American, 1; Spanish, 1; Australian, 1; West African, 1; and Abyssinian, 1. The Liverpool corporation has sanctioned a grant of £4000 to the proposed new out-patient department subject to the approval of the Local Government Board.

The Liverpool Dispensaries.

The charity known as the Liverpool Dispensaries consists of three institutions situated in different parts of the city and was founded in 1778. The committee is making an urgent appeal for £5000, which amount is absolutely necessary to carry on the work. Rebuilding operations which are essential at the East Dispensary account for one-half the sum named and the other half is needed to put the finances on a sound basis, the adverse balance being now £1035. Contributions promised include £500 from Mr. W. P. Hartley, £500 from Mrs. and Miss Holt, and £100 from Mr. William Clarkson.

The Renewal of the Abattoirs Lease.

At the meeting of the city council held on Feb. 12th a motion was proposed that the council rescind its resolution of July 18th, 1900, expressing disapproval of Trowbridge-street or the neighbourhood as the site of an abattoir. The town clerk intimated that communications had been received by the Lord Mayor from the committee and medical staff of the Royal Infirmary, from the chairman of the Lying-in Hospital (both institutions being in close proximity to the abattoir), and from the President of the Liverpool Medical Institution disapproving of Trowbridge-street or the neighbourhood as the site of an abattoir. Mr. T. H. Bickerton also forwarded a memorial signed by 378 medical practitioners disapproving of the present site and expressing the opinion that the public slaughter of animals should be carried out at a distance from the centre of the city. After considerable discussion the council agreed to appoint a special subcommittee to report to the council upon the desirability or otherwise of the corporation erecting, owning, and working dead-meat markets and abattoirs; the best sites for such businesses; the desirability of rescinding the resolution passed on July 18th 1900; and to ascertain the terms on which the abattoir company would sell their property. The history of the abattoirs goes back to the year 1838, when the corporation granted the company a lease of the land at present occupied for a term of 75 years. In 1883 the company applied for a renewal of the lease which was opposed by the medical profession and other residents. In 1890 the application was renewed in the lease of further opposition and the finance committee of the city council recommended the council not to renew the lease. The city council, however, by a small majority instructed the finance committee to renew the lease subject to suitable alterations. Nothing was, however, agreed upon and the matter was left in obeyance until 1897, when the city surveyor was instructed to report as to the most suitable site for abattoirs. The city council passed a resolution in 1900 disapproving of the present site. The lease expires in five years and the medical profession and the hospital managers of the institutions in the neighbourhood of Trowbridge-street anxiously look forward to the fiat of the city council that the abattoirs be placed outside the city bounds.

Gift by Lord Derby to the Bootle Hospital.

Lord Derby recently made a generous gift to the managers of the Bootle Borough Hospital. A leasehold plot of land adjoining the hospital, containing about 1200 square yards, was purchased from the Bootle corporation. Lord Derby has very generously presented to the institution the reversion in fee simple of the property and cancelled the ground rent, thus converting the property into freehold land. The original site of the hospital was also presented by the then Earl of Derby in 1869.

Feb. 25th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Appointment of Physician-Superintendent to the Royal Edinburgh Asylum.

THE directors of this important institution have elected Mr. George M. Robertson, M.B. Edin., F.R.C.P. Edin., to the post of physician-superintendent in place of Dr. T. S. Clouston who, as I recently intimated, had resigned. The new superintendent is a graduate in medicine of the University of Edinburgh, where he took the degree of M.B., C.M., in 1885. He was elected a Fellow of the Royal College of Physicians, Edinburgh, in 1893. Soon after graduation he devoted himself to lunacy by joining the staff of the asylum to which he returns as superintendent. It was when senior assistant to Dr. Clouston that he became the superintendent of the Murthly Asylum. From there he was moved to the Stirling District Asylum at Larbert. He is a lecturer on insanity in the Edinburgh Royal Colleges School of Medicine and in the Medical College for Women. He has written papers on a variety of subjects bearing upon his own department of medical work. He was employed by the Edinburgh District Lunacy Board as a medical expert to report on the plans for the large and costly asylum which that board erected at Bangour for the reception of pauper lunatics.

Clinical Meeting in the Edinburgh Royal Infirmary.

As is the custom at this season the Edinburgh branch of the British Medical Association have held a clinical meeting in the Royal Infirmary. As has been usual at these meetings a large room was devoted to the exhibition of specimens and other objects of medical and surgical interest. In the afternoon a large number of patients, both surgical and medical, were shown, the demonstration taking place in the large surgical theatre. Dr. Byrom Bramwell, as president of the branch, presided. In the evening a dinner was held. The meeting was largely attended and there was every indication that those attending appreciated the trouble which had been taken in bringing interesting cases before them.

The Dairies (Scotland) Bill.

A consolidation Bill has been presented to the House of Commons by Mr. Gulland and receives the support of Sir John Batty Tuke and other prominent Members of Parliament. The object of the Bill is to amend and to consolidate the laws of dairies in Scotland. At present the law on the subject is contained in four Acts of Parliament and three Orders, all of which are consolidated in this Bill with a view to giving practical force to legislation and of supplementing existing provisions.

Scottish Inter University Conference.

An inter University conference, consisting of three medical representatives from the University of St. Andrews, three from the University of Aberdeen, and four or five from the University of Glasgow, was held in the Senate Room, Glasgow, last week. The conference, which was held in private, was convened by Principal Donald MacAlister for the purpose of discussing the question of the medical ordinances in force in the Universities represented with reference to a possible revision and the institution of new regulations. The deliberations of the conference, it is hoped, will result in either joint or independent action on the matter by the three Universities concerned.

Glasgow Medical Officer and Vaccination.

Dr. A. K. Chalmers, medical officer of health of Glasgow, says in a report to the health committee that the Vaccination (Scotland) Act, 1907, came into operation on August 28th last and up to Dec. 31st the declarations of conscientious objection to vaccination lodged with the district registrars affected 474 children—251 males and 223 females. It was significant that only 87 of these children were more than a year old, while 304 were under six months. It suggested that they would have a rapidly increasing number

of children susceptible to small-pox and that the provision of permanent hospital accommodation for the disease must be greater and not less than formerly. In the early "seventies," when the population fell considerably short of 500,000, the provision was fixed at 150 beds; now Glasgow had a population of more than 800,000 and the likelihood of a yearly addition of susceptible children who had no parallel in the conditions then existing. Declarations had been made in every ward of the city save Blythswood and Broomielaw, but they were numerically greatest in Dalmarnock, Mile-end, Dennistone, Springburn, Woodside, Hutchesontown, Govanhill, Pollokshields, and Maryhill.

Hospital Abuse in Aberdeen.

Hospital abuse occurs in Aberdeen as in other large medical centres. The leading medical charities in Aberdeen are the Royal Infirmary, the Dispensary, Maternity, and Vaccine Institution, and the Royal Hospital for Sick Children. Patients applying for advice or treatment at those institutions are asked to give their names, ages, occupations, and addresses, no further guarantee of fitness for receiving help from a charitable institution is required. In Aberdeen, as in other large cities, a large proportion of those benefiting are quite above the class that were originally intended to be beneficiaries. This is especially so in the eye wards of the Aberdeen Infirmary, where, for example, it is no uncommon thing to find that patients who have had glasses ordered return with these framed in gold. While the medical officers are fully conscious of the existing abuses, the general feeling amongst them is that it is not their part to take any action. It is, indeed, very questionable if it is in their power to do anything to improve matters, for questions as to wage earnings, &c., too often only elicit evasive or erroneous answers and only trespass still further on the medical officer's time. In the case of the specialist also a further difficulty presents itself in that in refusing treatment he may practically be referring the patient to himself in a private capacity. Another way in which medical men in Aberdeen are exploited is by the numerous and in some cases very large lodges or clubs, so numerous and large indeed that their members compose a very considerable part of the community. These friendly societies, &c., pay their medical man annually 2*s.* 6*d.* per member, 3*s.* if in addition the family of the said member is attended. A certain countenance, however, is given to this class of practice by the fact, peculiar, I believe, to Aberdeen, that several of those on the staff of the Royal Infirmary hold such appointments.

Aberdeen University Medical Society.

The following officers have been elected for the ensuing year:—Honorary President: Professor J. A. MacWilliam. Presidents: Mr. A. G. Stewart and Mr. John Mitchell. Joint Secretaries: Mr. G. S. Melvin and Mr. C. F. Simpson. Treasurer: Mr. Adam Gray. Committee: Fifth year, Mr. A. G. Anderson and Mr. Alexander Wilson; fourth year, Mr. R. Richards and Mr. H. E. Smith; third year, Mr. R. M. Chance; second year, Mr. W. Henderson.

A Healthy Coast Burgh.

The report of the medical officer of health of the burgh of Millport states that the death-rate of the burgh for the past year, allowing for two infantile cases, was 14·3. The mean death-rate for the burgh during the past years has been 12·65. Of the 26 deaths registered during the year four were between 1 and 5 years, three between 40 and 60, six between 60 and 70, five between 80 and 90, and one at 95. From these figures it would appear that old age is the chief cause of death among the inhabitants. Only four cases of infectious disease were treated in hospital and all recovered.

Forres Leanchoil Hospital.

The annual general meeting of the governors of the Forres Leanchoil Hospital was held in the court-house on Jan. 28th. Reference was made by the chairman, Provost Lawrence, to the loss sustained by the hospital through the death of Sir George Macpherson Grant, Bart., of Ballendalloch, who was for many years chairman of the governors. The report showed that the number of patients in the hospital on Dec. 31st, 1906, was eight, and the number admitted during last year was 59, making the total number of patients treated 67, while ten remained in the hospital on Dec. 31st, 1907. The longest period during which any patient has been under treatment was 152 days, and the average number was 33 days.

Feb. 25th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Mortality from Pulmonary Tuberculosis in Ireland in 1907.

AT a meeting in Dublin on Feb. 18th of the supporters of the Hospital for Consumption the Registrar-General stated that the death-rate for pulmonary tuberculosis was 2·9 per 1000 in the Dublin registration area during 1907, the same as in 1906. In Belfast it was in 1907 2·5 per 1000, while it was 2·8 in 1906. In the 20 other principal town districts of Ireland the rate was 2·7 per 1000 in 1907, while it was 2·6 in 1906. He contrasted with these figures the rate (1·4) in London for 1907 and for the eight principal town districts of Scotland (1·5).

Death of Mr. Conolly Norman.

The death of Mr. Conolly Norman, the well-known specialist in lunacy and medical superintendent of the Richmond Lunatic Asylum, Dublin, occurred with startling suddenness on Sunday last. He collapsed in the street within a few yards of his door and died almost immediately. He had been unwell for some considerable time, influenza and bronchitis having affected his heart, but the tragic event was wholly unexpected.

Hospital Abuse in Ireland.

A combined meeting of the members of the Ulster Medical Society and of the Ulster branch of the British Medical Association was held in the Medical Institute, Belfast, on Feb. 20th, the President of the Medical Society (Dr. John McCaw) being in the chair. Dr. John Campbell, who opened the discussion, after dealing with the types of people mainly affected by hospital abuse detailed the methods which had been suggested to overcome the abuse, viz.: (1) ascertaining the patients' position by the hospital medical officer; (2) employment of inquiry officer or almoner; and (3) referring the case to a general practitioner. He urged the last as the best method. Mr. A. Fullerton divided the cases coming into hospital into (*a*) the really necessitous poor; (*b*) "border-line" cases; (*c*) unprincipled spongers; and (*d*) those who come under a system of "penny a week" contributions. The following then spoke in regard to the management of "out-patient" departments as the cause of the abuse: Dr. H. O'Neill, Dr. C. Kevin, Mr. A. McConnell, Dr. J. S. Darling, Mr. G. L. St. George, Dr. R. Campbell, Mr. A. B. Mitchell, Dr. A. Trimble, Dr. W. M. Killen, Dr. H. L. McKisack, Dr. D. C. Kirkhope, Dr. P. O'Connell, Dr. J. Simpson, Dr. J. S. Morrow, Dr. R. J. Johnstone, Dr. I. A. Davidson, Dr. D. P. Gaussen, Mr. W. Burns, and Dr. J. McCaw. The following motion was unanimously adopted:—

That a circular be sent to the practitioners in Ulster asking them to second the efforts now made by the staffs of the various charitable hospitals to reduce hospital abuse by taking steps to prevent well-to-do patients from coming to these institutions.

A small subcommittee, consisting of Dr. McCaw, Dr. Kevin, Mr. Burns, Dr. R. Watson, Dr. Davidson, Dr. Elizabeth G. Bell, Dr. R. M. Fraser, and Dr. Trimble was appointed to arrange details.

High Death-rate in Belfast.

For the week ended Feb. 15th the death-rate in Belfast from all sources was 28·2 and 2·2 from the zymotic diseases. The superintendent medical officer of health attributes this fact to climatic conditions, there being 105 deaths from diseases of the respiratory organs—viz., pulmonary tuberculosis, bronchitis, and pneumonia. It is not convincing to plead climatic conditions as a cause for pulmonary tuberculosis, for sometimes the greatest number of deaths from this disease is in the summer quarter, and this has occurred in Ireland.

The Belfast Maternity Hospital.

At the annual meeting of the supporters of this charity held on Feb. 20th, it was reported that there had been during the year 1907 378 intern and 283 extern cases. The mortality of the intern cases was 1·3 and of the extern *nil*. There were 185 extern gynæcological cases.

Feb. 25th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Medical "Entente Cordiale."

ON Feb. 18th an address on "Diatheses" was delivered in French by Sir Dyce Duckworth, lecturer on clinical medicine to St. Bartholomew's Hospital, and President of the English committee of the medical *entente cordiale*, in the large amphitheatre of the Faculty of Medicine of the University of Paris, which was crowded to its roof. The University welcomed its distinguished guest in the warmest manner, for his reputation is no less in France than in his own country. Sir Dyce Duckworth was received in the council chamber by all the professors and *agrégés* professors, who were in academic costume, and then descended to the amphitheatre, where he was greeted with a regular ovation. Here he was received by Professor Landouzy, dean of the Faculty, who bade him welcome, and Sir Dyce Duckworth then read his address, which was an admirably expressed combination of pathology and philosophy.

The Ophthalmo-Reaction in Tuberculosis.

About a month ago [1] I mentioned a communication made by Dr. Calmette of the Pasteur Institute of Lille concerning the ophthalmo-reaction in tuberculosis, a reaction which he was anxious to see applied to the troops. It consists in instilling into the conjunctival sac a few drops of a solution of Koch's tuberculin prepared in a certain way. If the patient is tuberculous it is claimed that a characteristic reaction follows. At a meeting of the Academy of Medicine held on Feb. 11th M. Delorme, Inspector-General in the Army and director of the School of Val-de Grâce, discussed the question. In his opinion the reaction obtained by the instillation of tuberculin is neither specific nor infallible. Other toxins beside the tuberculous toxin will give a positive result. Moreover, since the reaction takes some time to appear, anyone who was interested in showing a reaction could obtain it by rubbing the eye or by dropping in a little of any irritant fluid. It is unjustifiable, said M. Delorme, to impose such an uncertain test upon subjects who may not be tuberculous and in whom the test may bring about a disastrous moral effect. Finally, in some cases the reaction is painful. It may take the form of acute conjunctivitis with photophobia, which lasts for from eight to ten days. M. Delorme had seen erysipelas in two cases and keratitis in others.

A New Chair at the Faculty of Medicine.

By a decree dated Feb. 9th, founded upon a report of the Minister of Public Instruction and Fine Arts, M. Ribemont-Dessaignes, *agrégé* of the Faculty of Medicine, who was the head of the obstetrical clinic at the University of Paris, has been appointed Professor of Clinical Obstetrics at the Faculty of Medicine.

Basal Pulmonary Abscess.

At a meeting of the Surgical Society held on Feb. 12th, M. Loison read a paper on the above condition. He cited three cases, the first being that of a young soldier who had been in Madagascar. He was invalided home with symptoms of suppurative hepatitis. M. Loison found multiple abscesses of the liver and resected two ribs, for one abscess communicated with the pleura. He overlooked, however, an abscess at the base of the lung which latter opened into the bronchi. In a second case the patient had had several hepatic abscesses laid open but the symptoms still persisted. It was thought that perhaps there was another hepatic abscess or possibly some pleural trouble. Exploratory puncture of the liver gave no result. The patient died and at the post-mortem examination an abscess of the base of the lung was discovered not in communication with the bronchi. In the third and last case the symptoms were those of hepatic abscess but puncture gave no result. The pleural sac was then incised from behind and the base of the lung was found to be very resistant and firmly adherent. It was found to be impossible to break down the adhesions and the exploration was not carried further.

Feb. 25th.

[1] THE LANCET, Feb. 1st, p. 397, and see also Dec. 7th, 1907, p. 1629.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The Treatment of Diphtheria by Pyocyanase.

Dr. Richard Mühsam lately read a paper before the Berlin Surgical Society on the treatment of diphtheria by pyocyanase. He said that pyocyanase was a bacteriolytic enzyme which was obtained by filtering a culture of the micrococcus pyocyaneus three weeks old through a Berkefeld filter and concentrating it *in vacuo* to a tenth of its volume. The bactericidal action of pyocyanase, especially against meningococci, has been satisfactorily made out by several recognised authorities. Dr. Zucker and Dr. Emmerich examined its action on diphtheria and met with good results, as both the local lesions and the general state of the patients were favourably influenced. Dr. Mühsam found that pyocyanase hindered considerably the development of diphtheria cultures and by injections of pyocyanase into guinea-pigs infected with diphtheria bacilli the life of the animals was preserved. He then administered pyocyanase to patients suffering from diphtheria. The treatment consisted in spraying about two cubic centimetres of pyocyanase on the diphtheric membrane; this must be twice repeated at intervals of five or ten minutes several times a day. In cases of diphtheria of the nose a nasal spray apparatus was used and when tracheotomy had been performed the spray was directed into the cannula. This treatment was employed for 23 patients, of whom four died, being a mortality of 17 per cent., which was equal to the death-rate of the cases treated exclusively by Behring's serum. The number of cases was, however, too small to enable a definite opinion to be formed as to the relative merits of pyocyanase and Behring's serum. A marked difference between the action of pyocyanase and the serum was apparent in the destruction of the membranes; whilst after the administration of serum the membrane was detached in large pieces, it was as it were dissolved by the pyocyanase; the tonsils and the uvula assumed a greyish-white appearance as if they were covered by a veil and the fœtor usually disappeared after one or two sprayings. In cases of dyspnœa the children inhaled the spray of a solution of pyocyanase diluted with water and in several instances membrane was then discharged through the cannula. The temperature usually declined on the second day and the patient was relieved. Dr. Mühsam concluded from his experiences that pyocyanase should be used together with, and as an adjuvant to, Behring's serum.

The Treatment of Asthma by the Roentgen Rays.

At a recent meeting of the Berlin Medical Society Dr. Immelmann read a paper on the Treatment of Bronchial Asthma by the X Rays. The results were favourable, the discharge becoming more liquid and the attacks less frequent. After repeated exposure to the rays the intervals between the attacks became longer, so that in course of time complete recovery ensued. The results were particularly good in the case of young patients. Dr. Immelmann recommended that the rays should be directed once or twice a week on the anterior, posterior, and lateral parts of the thorax for about ten minutes. The action of the rays depended on the effect which they produced on the secretion and showed itself soon after the first exposure. In the discussion Dr. Levy-Dorn pointed out that the success of the treatment rested principally on suggestion. He has sometimes obtained good results by simply placing the patients before the apparatus and telling them that they were being exposed to the rays, although this was in fact not so. In one case of real administration of the rays he had obtained a successful result. Dr. Immelmann replied that as Dr. Levy-Dorn admitted that patients under his care had recovered after being in close proximity to the apparatus it was practically of no importance whether the recovery was due to suggestion or not.

Death of Professor Voit.

Professor Karl von Voit, late professor of physiology in the University of Munich and one of the leading physiologists of Germany, died in Munich on Jan. 31st. He was born in 1831 at Amberg in Bavaria and received his professional education at Würzburg, Munich, and Göttingen. After having taken the degree of M.D. he became an assistant to Professor Bischoff, the ordinary professor of anatomy and physiology in the University of Munich, these two subjects

being at that time not yet separated. In 1860 he became extraordinary professor and in 1863, when for the first time an ordinary professorship of physiology was created, this appointment was given to him and he held it until his death. From the beginning of his career he devoted himself to physiology and especially to the physiology of nutrition. In 1854 he published his first work on the circulation of nitrogen within the organism and in 1856 he and Professor Bischoff published a work on the nutrition of carnivorous animals. His principal researches, however, concerned the rôle of nitrogen in the human organism and were made by him and the late Professor von Pettenkofer jointly in the well-known respiration apparatus provided for them by the munificence of the late King Maximilian of Bavaria. They found that no nitrogen was excreted during respiration and concluded that the albuminous substances of the food were exclusively directed to the preservation of the organism. Professor Voit was not a mere theoretical savant but utilised his researches practically in connexion with the food of soldiers and working people. He edited, together with the late Professor Kühne, a monthly journal called the *Zeitschrift für Biologie*. The medical faculty of Munich and the whole scientific world of Germany have sustained a heavy loss by his death.

The Health of School Children.

The annual report of the medical officers of the Berlin municipal schools states that a large number of the children suffered from general debility, scrofulosis, and tuberculosis. Of 35,481 children for whom admission was sought 1139 had to be refused for general debility, 158 for scrofulosis, and 172 for tuberculosis of the lungs; at the same time 1234 children suffering from general debility, 478 suffering from scrofulosis, and 277 suffering from pulmonary tuberculosis were admitted subject to their being kept under medical observation. Of all the 277,730 children attending the municipal schools 5129 suffered from imperfect nutrition, 1751 from scrofulosis, and 1386 from pulmonary tuberculosis; all these cases were accordingly kept under medical observation. The report draws the attention of the school authorities to the great number of children who are insufficiently fed and suggests that this question might form the subject of a collective investigation. The municipal authorities have now decided to lay out 20,000 marks (£1000) in supplying the poorest of the children with food.

Feb. 24th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

A Lady Professor.

THE Renaissance in Italy was signalised by the auxiliaries which it drew from the female sex. The Italian "Risorgimento" was indebted for much of its success to the ladies who gave up their lives to it. The unity and independence of the kingdom once achieved, it was not to be expected that the female element which had promoted it would thereafter efface itself; on the contrary, that element has made itself felt for good in the rehabilitation of the national life, not only in the "risanamento" (hygienic improvement) of the household but in the sphere of instruction itself, civic and professional. This is of good augury for Italy—to be accepted as compensation for the backward condition of the islands and southern provinces where education, like charity, has yet to begin "at home." The healing art and the nature-study on which it is based now number many votaries among the women of Italy, and though, even when proceeding to graduation, they will never enter into serious competition with their male contemporaries, they will hasten on the movement towards making every boy and girl "the intelligent custodians of their own health" and so creating that "social atmosphere" in which legitimate medicine has nothing to lose and the "irregular practitioner" nothing to gain. Such popular treatises as "Le Insidie della Vita" (the snares set for life) by Miss Ruata, one of the teaching staff of the University of Perugia, are already inspiring many imitators, and now we have another lady acting as more than "privat-docent" and filling an academic chair in a Sardinian seat of learning. This seems a return to the "golden days" of Bologna, when that "Mater Universitatum" had female lecturers on anatomy—lecturers in whose footsteps a worthy follower has just appeared in Dr. Rina Monti, elected after "comparative trial" to the chair of zoology in the University of Sassari, with the other post annexed to it, that of director of the "Museo Zoologico." This lady is the first, since Italy became a united kingdom, to be one of a "Senatus Academicus," and certainly her career as a student seems amply to have entitled her to the honour. A Lombard by birth (born at Arcisate near Lake Como) she belongs to a family distinguished in science and particularly in medicine, her uncle being Dr. Alois Monti, professor of "kinderheilkunde" in the University of Vienna, and her brother Dr. Achille Monti, professor of pathological anatomy in the University of Pavia. Her first education she received at Milan whence she passed to the University of Pavia where, having enrolled as a student of medicine, she took high honours in the classes of Camillo Golgi, Taramelli, Artini, Maggi, Cantoni, and Pavesi. In 1893 she graduated in medicine with great distinction, after which she became assistant to Professor Maggi, on whose death she continued the instruction in the class-room till his successor was appointed, whereupon for two years she was intrusted with the course of lectures on zoology in the University of Siena. Her contributions to the transactions of medical and other scientific associations number about 50, while as to the associations themselves she is a member not only of such indigenous ones as the "Istituto Lombardo di Scienze e Lettere" and the "Accademia dei Fisiocritici" but of many beyond the Alps, French and German particularly. In 1898 she gained the Cagnola prize of 3000 francs (£120) for nature study offered by the Istituto Lombardo. Sardinia, backward in many ways, known indeed as "the Cinderella of Italy," is justly proud of the initiative that she has taken in reinforcing her academic staff by such an able and accomplished research student and teacher as Dr. Rina Monti.

"Il Riposo Settimanale."

"Even Sunday shines no Sabbath Day to me." Pope's famous line might fitly have dropped from the lips of many an Italian son of toil, for the occasional "festa," usually a saint's day, has been but a poor substitute for the "one day in seven" enjoyed by his British counterpart. At last, mainly on hygienic grounds, the proletariat of Italy have secured the adoption of the "day of rest," long an "institution" in England and Scotland, and although there has been protest and even active resistance to it on the part of many employers of labour, agricultural, commercial, and industrial, still this new law of the land has come to stay. Of course, there will be attempts to evade it and already more than one local committee is devising measures to protect the labourer from the intrusion of others who may engage in work on the "off day" and so cause, if not justify, a reduction of the said labourer's earnings. At Florence, for instance, at a great meeting attended by communal and municipal assessors, as well as members of Parliament, a resolution was carried with the object of penalising the evasion in question. But reports from all the important centres of population agree in showing that the innovation, which came into force on the 2nd inst., has been welcomed as a real boon by the parties most interested—the working-classes themselves, and that the employers who are opposed to it will ere long find their opposition impolitic. It remains for the communes and municipalities to carry out the intentions of the framers of the new law and by the attractions and means of healthful entertainment to countervail the inducements or temptations too often held out to the festal holiday-maker, particularly in Latin countries.

Feb. 22nd.

CONSTANTINOPLE.

(FROM OUR OWN CORRESPONDENT.)

The Druggists and their Tariffs.

TURKISH chemists and druggists often exact exorbitant prices for medicines. There exists, however, a kind of an official tariff sanctioned by the Government but, as is the case with many another legal regulation in Turkey, the tariff remains a dead letter. I have personal experience of the enormous charges made by some druggists. Thus a patient of mine paid once for a dose of the well-known remedy for tapeworm consisting of extract of filix mas, mucilage of acacia, and peppermint water, half a Turkish lira (9*s.*). This was in a private druggist's shop but the condition of affairs is not better with regard to the service of the municipal dispensaries. This is the more deplorable as very often no distinction is

made between the really poor and the more or less well-to-do patients, the indigent having frequently to pay not only the full amount but considerably above it. This state of things came lately before the notice of the Commission of Public Hygiene, having its sittings in the prefecture of the city. This Commission has now decided to formulate strict and elaborate regulations for a satisfactory service in the municipal druggist shops. The step has been approved and every municipality will in due course receive printed copies of the new regulations. The tariff for medicines should be revised and put on a proper working basis.

Grocers and Pharmaceutical Preparations.

All the grocers here conduct an unlimited sale of different medicinal plants, pharmaceutical preparations, and proprietary drugs the composition of which is frequently unknown, though there exists a law strictly prohibiting this practice. The grocers get all these articles directly from Europe. The custom house authorities have now received stringent orders to detain every medicinal article addressed to any shopkeeper and to take further steps to prevent the unlicensed and mischievous sale of drugs. Henceforward only legalised druggists and chemists will be allowed to receive medicines through the custom house. The same orders have been sent, I understand, to the custom house authorities of different provincial towns.

Unlicensed "Chirurgiens-Dentistes."

In Constantinople, and I hear in the Turkish provinces as well, there are many persons who exercise the practice of dentistry without any qualification whatever. They often style themselves by the well-sounding name *chirurgiens-dentistes*. Prohibitions which have been issued from time to time by the authorities have proved altogether inefficient. This time, however, a more energetic means has been taken. According to the *Levant Herald*, all the door-plates of the would-be dental surgeons have been removed and the individuals themselves will be subjected to judicial prosecution.

Feb. 21st.

Obituary.

ROBERT SYDENHAM FANCOURT BARNES, M.D. ABERD., M.R.C.P. LOND., F.R.S. EDIN.

NOT many months have passed since we recorded the death of a great obstetrician, Dr. Robert Barnes, and now we have the same office to perform in commemoration of his son, Dr. Fancourt Barnes, who at one time promised to have a career as distinguished as his father's until continued ill-health obliged him to relinquish active practice, with the consequence that the last years of his life were spent in professional retirement. He was born in London in 1849 and was educated at Merchant Taylors' School whence he proceeded to Lincoln College, Oxford. He went to St. Thomas's Hospital for his clinical work and then proceeded to Dublin to study the branch of medicine in which he had become interested at the famous school of the Rotunda. Subsequently he worked at Marischal College, Aberdeen, and at that university he graduated M.B., C.M., in 1875. Returning to London he devoted himself to gynæcology and two years later he obtained the Membership of the Royal College of Physicians of London. He became closely associated with his father's practice and, in the opinion of that distinguished specialist, he was singularly endowed with the qualities of a successful operator. His progress on the gynæcological ladder was rapid and he held a multiplicity of hospital appointments. Thus by the time of his retirement he was, or had been, senior physician to the Chelsea Hospital for Women, physician to the General Lying-in Hospital, physician to the St. George's Dispensary for Women and St. James's Dispensary, and obstetric physician to the Great Northern Central Hospital; he was also consulting physician to the British Lying-in Hospital, from the active staff of which he had retired earlier. He held a similar position at the Royal Maternity Charity and the Prudential Assurance Company. He was an untiring worker in the literary field of his profession and not only was he at one time a sub-editor of the *British Medical Journal* but he was also the author of several text-books in his own special branch of study. These were "A Manual of Midwifery for Midwives" which ran through nine editions; "Perineorraphy by Flap-Splitting" which was issued thrice; and a "System of Obstetric Medicine and Surgery" which was brought out in collaboration with his father. He was closely in touch with the progress of gynæcology abroad and was honorary corresponding fellow to the Société de Gynécologie de Paris, the Gynæcological Society of Boston, U.S.A., and the Société Impériale de Médecine, Constantinople. His linguistic knowledge enabled him to translate and to edit "Martin's Atlas of Obstetrics and Gynæcology" and for the New Sydenham Society, "Neugebauer on Spondylolisthesis." He also produced a German-English dictionary of medical words. Amongst his many contributions to contemporary literature may be mentioned "The Indications afforded by the Sphygmograph in the Puerperal State" (Transactions of the Obstetrical Society of London, 1875), and "Ovariotomy in Aged People" and "Fifty Consecutive Cases of Abdominal Section" (*Provincial Medical Journal*, 1889 and 1893). His scientific attainments gained him the Fellowship of the Royal Society of Edinburgh, and in the "eighties" and "nineties" he was not only a man of authority in his own profession but was a well-known figure in a wider social circle. Fancourt Barnes was a man of great energy and ability and he made his mark early. It is much to be regretted that confirmed ill-health compelled his retirement and prevented the full fruition of labours which were of real service to the science of medicine. He was twice married but leaves no family.

OWEN ROBERTS, M.D. ST. AND., M.R.C.S. ENG., L.R.C.P. EDIN.

BY the death of Dr. Owen Roberts, which occurred on Feb. 18th at his residence in Cambridge-gardens, W., a prominent figure has been removed from the district of North Kensington, where he had carried on a steadily increasing practice during the last 40 years, a practice with which two of his sons had for some years been associated. Dr. Roberts was born at Rhyllac in North Wales in 1837 and was educated at a private school in his birthplace. Coming to London he was one of the earliest students of St. Mary's Hospital, where he was a contemporary of the late Sir William Broadbent, and came under the excellent influence of Sibson's clinical teaching. He obtained qualifications in England and Scotland, taking the M.R.C.S. in 1868 and the obsolete Licence in Midwifery in the following year, when he also took the London L.S.A. diploma. He then started practice in North Kensington, but subsequently in 1874 he went up to Edinburgh and obtained the L.R.C.P. and L.M. there, and five years later the M.D. of St. Andrews. He held several appointments, including that of medical officer to the Franciscan Convent in his neighbourhood. Dr. Roberts was an enthusiastic Welshman and figured largely at the gatherings of his brothers of the Principality. Personally he was an extremely active and athletic man, keenly interested in all sports, and especially in cycling and swimming at which he was an expert. A large circle of patients as well as of personal friends have sustained a severe loss by his death, for his tactful sympathy and cheery kindness were of a quality that will not be readily forgotten. The cause of his death was pneumonia to which he succumbed after a five weeks' illness. He leaves five sons and one daughter, of whom three sons are in the medical, and one in the dental, profession.

GEORGE THOMAS ALBERT STAFF, L.R.C.P. IREL., M.R.C.S., J.P.,

LATE SURGEON-SUPERINTENDENT, QUEENSLAND GOVERNMENT SERVICE.

Mr. George T. A. Staff died at St. Ives (Cornwall) on Feb. 15th in his sixty-eighth year. The deceased, who received his medical education at St. George's Hospital, qualified M.R.C.S. in 1863, taking the L.R.C.P. and L.M. of Ireland in 1879. Shortly after qualifying he entered the Queensland Government service and became surgeon-superintendent of that department. He came to England 28 years ago and commenced practice at St. Ives (Cornwall) where he soon became highly popular. He was (for ten years) medical officer of health of St. Ives, district medical officer, public vaccinator, Admiralty surgeon and agent, and surgeon to the Great Western Railway employees. Mr. Staff was placed on the commission of the peace of St. Ives in 1886. He was a prominent Freemason. Owing to failing health he relinquished his professional work and went to reside at Westoe, near Ashburton (Devon), but after a residence there of two years he returned to St. Ives.

Medical News.

UNIVERSITY OF LONDON.—At the Preliminary Scientific Examination held in January the following candidates were successful:—

PART I.—INORGANIC CHEMISTRY, EXPERIMENTAL PHYSICS, AND BIOLOGY.

Inorganic Chemistry, Experimental Physics, and Biology.—Walter Martin Ash, London Hospital; Thomas Percy Lewis, University College, Reading; Lionel Page, Epsom College and University College, Bristol; Harold Webb, Guy's Hospital; Aubrey Harrison White, University College, Bristol, and private tuition; and Noel Tancred Whitehead, St. Thomas's Hospital.

Inorganic Chemistry and Experimental Physics.—John Corfield Pitter Bayley, Victoria University of Manchester; ‡Percival Courtenay Coie, St. Bartholomew's Hospital; ‡Rolf Creasy, Guy's Hospital; Jules Maurice Curé, St. Bartholomew's Hospital and Royal College, Mauritius; ‡Gertrude Dearnley and Gertrude May Flumerfelt, London (Royal Free Hospital) School of Medicine for Women; ‡Adolph Gottlob Hieber, University College, Bristol, and University Tutorial College; ‡Edward Sancton W. Hirsch, St. Mary's Hospital; Henry Naunton Morgan and ‡Guy William Parry, University College, Cardiff; William Robinson, Guy's Hospital; ‡Eric Graham Saunders, St. Thomas's Hospital; William Collis Spackman, University of Birmingham; Charles Edgar Thornton, Middlesex Hospital and private study; and Percy Whitehead, King's College.

Inorganic Chemistry and Biology.—†Alexander Frederic Potter, St. Thomas's Hospital; †Francis Clark Watson, University of Leeds; John Delafosse Wilkinson, St. Thomas's Hospital; and †William Arthur Young, Guy's Hospital.

Experimental Physics and Biology.—Leonard Barron Baird, Victoria University of Manchester; *Lancelot G. Bourdillon, St. Thomas's Hospital; *Dorothy Cochrane Logan, University College, Cardiff; *Arthur Richard Sharrod, London Hospital; Harman Taylor, Victoria University of Manchester and private study; and *Joseph Alexander Tsoi-A-Sue, London Hospital.

Inorganic Chemistry only.—†‡Edward Smith Abraham, University College, Bristol; †‡Edward Bach, University of Birmingham; †‡Henry Washington Batchelor, London Hospital; †‡Raymond Brewitt-Taylor, St. Bartholomew's Hospital; †‡John Lloyd Davies, University College, Cardiff; †‡Joseph de Silva, St. Mary's Hospital; †‡Abel Evans, University College, Cardiff; †‡William Stanley George, Guy's Hospital; †‡John Higgins and †‡Charles Eric S. Jackson, St. Mary's Hospital; †‡George Battersby Jameson, Victoria University of Manchester; William Edward Kingdon, Trent College, Long Eaton; †‡Gwilym Rhys Pennant and †‡Thomas Harold Phillips, University College, Cardiff; †‡Aubrey John C. Tingey, University of Liverpool; †‡James Vaughan-James, University College, Cardiff; and †‡Honoria J. Wallace, University Tutorial College.

Experimental Physics only.—*†Arthur Ernest Bullock, St. Paul's School; ‡Edward Alexander M. J. Goldie and ‡Aubrey Goodwin, University College; *‡Edward Athol C. Langton, St. Bartholomew's Hospital; *Horace Mather, Guy's Hospital; Nathaniel Montgomery, King's College; ‡George S. Papadopoulos, St. Bartholomew's Hospital; *†Claud John B. Pasley, King's College and Westminster Hospital; *‡Francis Henry Balfour Percival, St. Bartholomew's Hospital; Evelyn Dennis Scott, private tuition; *‡Catherine Violet Turner, University Tutorial College; *‡Edgar William Whiting, St. Bartholomew's Hospital; and *‡Cecil William Wilson, London Hospital and private study.

Biology only.—*† Francis Dighton Annesley, Guy's Hospital; Guido Carlo Giulio Baldini, St. Bartholomew's Hospital; Humphrey James Barnicoat, London Hospital; *† Oscar N. William Brown, King's College and Westminster Hospital; Lionel Alfred Dingley, University College; *† Israel Feldman, private study; Harry Hope Fisk, St. Mary's Hospital; Percy Douglas Hamilton, Charing Cross Hospital; Helena Rose Lowenfeld, Ladies' College, Cheltenham; *† George Harold Pearson, London Hospital; *† Frederick Harold Rees, University College, Cardiff; *† Aneurin Evan Roberts, London Hospital; *† William Simpson, St. Bartholomew's Hospital; *† Harold Eustace Thorn, St. Paul's School; and Herman Crowther Viehoff, University of Liverpool.

* This candidate has already passed in Organic Chemistry.
† This candidate has already passed in Experimental Physics.
‡ This candidate has already passed in Biology.

PART II.—ORGANIC CHEMISTRY.

Pass List.—Carlyle Aldis, Guy's Hospital; John Appleyard and Phirozshaw Cooverji Bharucha, University College; Florence Hilda Bousfield, London (Royal Free Hospital) School of Medicine for Women; Noel Hawley Michael Burke, King's College; Gilbert Charles Chubb, B.Sc., University Hospital; Henry St. Clair Colson, Hartley University College; Gordon Covell, Guy's Hospital; Isaac Milton Davies, University College, Cardiff; Robert Joel Cazalet Douty, Middlesex Hospital; William Henry Edmunds, University College, Cardiff; George Ernest Elkington, University of Birmingham; Reginald Robert Elworthy, Westminster Hospital; Lionel Hugh K. Finch, private study; Philip Withers Green, St. Mary's Hospital; Geoffrey Hadfield, St. Bartholomew's Hospital and Plymouth Technical School; Thomas Edwin Hammond, Cheltenham College and St. Bartholomew's Hospital; Stuart Leighton Heard, London Hospital; Cyril George Hewett and Harold William Hills, University College; Erik William Hodgson, St. Thomas's Hospital; Harold John Hutchens, private tuition; Cecil Meredyth Jones, University College, Cardiff; Francis Harry Kelly, Middlesex Hospital; Leonard Stanley Kempthorne, University College; William Balfour Laird, St. Thomas's Hospital; Gerald Laurence, Middlesex Hospital; Andrew Bonar Lindsay, James Duncan Lyle, and Maurice Mackenzie, London Hospital; Mary Cecil Martin, University College and London (Royal Free Hospital) School of Medicine for Women; Thomas Hartley Martin, University of Liverpool; Percy James Montgomery, Middlesex Hospital; William David Owen, University College, Cardiff; William Hilton Parry, University of Liverpool; Cresswell Lee Pattison, St. Mary's Hospital; Reginald Edward Porter, London Hospital; Thomas William Watkin Powell, St. Mary's Hospital; Maitland Radford, University College; Noel Ravenchil Rawson, London Hospital; Theodore Essex Roberts, Guy's Hospital; Hugh Huntley Robinson and Douglas Ross, London Hospital; Samuel Pryce Rowlands, University College, Cardiff; Harold Rowntree, Middlesex Hospital; Walter Salisbury, University College, Bristol; Maitland Scott, Guy's Hospital; Henry Kenneth Victor Soltau, St. Bartholomew's Hospital; Mildred Blanche Stogdon, London (Royal Free Hospital) School of Medicine for Women; Aubrey William Venables, University Tutorial College and private study; Godfrey Alan Walker, London Hospital; and William Bernard Wilson, University College and St. Bartholomew's Hospital.

N.B.—This list, published for the convenience of candidates, is issued subject to its approval by the Senate.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates passed in the subjects indicated:—

Surgery.—H. M. Jones (Section II.), Royal Free Hospital; and F. B. O'Dowd (Section II.), Birmingham.

Medicine.—C. F. Curtis (Sections I. and II.), Manchester; M. Fisher (Sections I. and II.), Royal Free Hospital; O. C. H. L. Moll (Section I.), and E. H. Paterson (Sections I. and II.), Guy's Hospital; L. G. Powell (Sections I. and II.), Royal Free Hospital; W. W. Stacey (Sections I. and II.), Manchester; N. C. Wallis (Section II.), London Hospital; and H. F. Wight (Section I.), Guy's Hospital.

Forensic Medicine.—C. F. Curtis, Manchester; H. W. B. Danaher, London Hospital; F. S. Hawks, King's College Hospital; L. G. Powell, Royal Free Hospital; H. C. Simpson, Edinburgh; and S. Speelman, Amsterdam.

Midwifery.—L. G. Powell, Royal Free Hospital; H. C. Simpson, Edinburgh; and W. W. Stacey and S. H. Sugden, Manchester.

The diploma of the society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery: C. F. Curtis, F. B. O'Dowd, E. H. Paterson, and W. W. Stacey.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—The following candidates having passed the necessary examination have been admitted Fellows of the College:—

B. P. Banaji, P. T. Carpenter, M. D. Healy, H. L'Estrange, and T. S. Reddy.

The following have passed the Primary part of the examination:—

H. G. P. Armitage, K. K. Chatterji, W. Doolin, A. Foley, E. W. O'G. Kirwan, A. M. Lanphier, J. S. Pegum, R. H. Weir, and R. White.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. A. Buschke, *privat-docent* of Dermatology, and Dr. Arnold Hiller, *privat-docent* of Medicine, have been granted the title of Professor. Dr. René du Bois-Reymond, *privat-docent* of Physiology, and Dr. Martin Ficker, *privat-docent* of Hygiene and Bacteriology, have been romoted to Extraordinary Professorships. The title of Professor has also been granted to Dr. B. Bendix and Dr. Hugo Neumann, *privat-docenten* of Children's Diseases.—*Breslau:* Dr. L. Mann, *privat-docent* of Neurology, has been granted the title of Professor.—*Florence:* Dr. Astenore Bertorri has been recognised as *privat-docent* of Ophthalmology.—*Memphis Hospital Medical College:* Dr. Dupree M. Hall has been appointed to the chair of Physiology. Dr. James B. McElroy has been appointed to the chair of Pathological Anatomy.—*Naples:* Dr. A. Fenoaltea has been recognised as *privat-docent* of Ophthalmology.—*New York (Cornell University Medical College):* Dr. Emery Taylor has been appointed Assistant Professor of Anatomy.—*Philadelphia (University of Pennsylvania):* Dr. David L. Edsall has been appointed to the Chair of Therapeutics in place of Dr. Horatio C. Wood, who has resigned.

ROYAL SOCIETY OF ARTS.—The third Shaw lecture on Industrial Hygiene was delivered on Feb. 7th by Mr. William Burton, F.C.S., who took for his subject the Hygiene of the Pottery Trade. He said that the principal danger to the health of pottery workers consisted in the presence of two different kinds of dust, both of which were injurious to health but not in the same way. One of these consisted of sharp angular particles derived from the powdered flint in which the ware was packed whilst being baked into biscuit. His account of the improved appliances by which the dangers of this dust had been reduced agreed substantially with details recently made public by Dr. Frank Shufflebotham of Newcastle-under-Lyme and commented on in THE LANCET of Feb. 15th, p. 511. The second kind of dust owed its dangerous properties to the presence of lead derived from the glazing solution into which the biscuit was dipped. The dipped articles were reheated for the purpose of melting the glaze but a preliminary trimming by hand was necessary when the articles were of an intricate form or

when they had to be finished to an exact size. In this case the workers should sit in front of an exhaust air duct and have a tray of water into which the powder that was detached might fall. Leadless glazes, he said, had a very limited field of application; lead glaze, on the other hand, was absolutely indispensable for 90 per cent. of the pottery made in Great Britain.

THE annual general meeting of the Association of Certificated Dispensers will be held in the Apothecaries' Hall of London on Thursday, March 5th, at 7.30 P.M.

HEALTH OF BRITISH GUIANA.—We have received the report for last year to the Governor of British Guiana of Dr. W. F. Law, medical inspector and acting surgeon-general of that colony. The relations of the birth- and death-rates are not as satisfactory as was the case in the previous year, the former being 32·9 per 1000, as against 33·6 in 1905–06, and the latter 28·8, as against 27·4 for that year. The births still exceeded the deaths by 1269. During the year the report of a commission appointed to consider the cause of excessive infantile mortality was published and several of the more easily adopted of its recommendations have been carried out, notably, the supply of quinine at a cheap rate, the distribution of cards on infant feeding, tuberculosis, and the destruction of mosquitoes, and the question of establishing a small staff of trained midwives is under consideration in Georgetown where the mortality largely occurs. The report continues: "It is a pity we could not get some members of a nursing sisterhood from home to take up this work and also the nursing of the sick poor in the city. If this could be brought about many lives would be saved and much unnecessary suffering averted." Tuberculosis is very prevalent in the colony and was the cause of 7·5 per cent. of the total deaths during the past year; in Georgetown it accounted for 11·7 per cent. of all the deaths during the same period. A society for the prevention of tuberculosis has been started "in a small way" for the treatment of those afflicted with the disease and the education of the people in the principles of its prevention. With the object of limiting malaria quinine has been placed on sale in Government stamped tablets at the post-offices and is retailed at the rate of 2 cents for 30 grains, with hints as to its use and dosage for children and adults. The hospitals have done good work in the year, 12,126 in-patients and 60,914 out-patients having been treated at the institution at Georgetown, and its operating theatres having been refitted a large amount of abdominal surgery has been successfully performed on aseptic principles. The pathologist to the hospital, Mr. K. S. Wise, adds an interesting report on the work done by him in the past year, including a note of a spirochæta found in 19 out of 32 cases of granuloma pudendi, an observation which has confirmed previous investigations by Mr. Wise.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Medical Companies.

Sir JOHN BATTY TUKE has the formal support of Sir PHILIP MAGNUS, Sir WILLIAM COLLINS, Mr. CHARLES PRICE, and Mr. GULLAND in submitting the Prohibition of Medical Practice by Companies Bill to the House of Commons.

Deaths from Starvation in London.

On the motion of Mr. TALBOT a return has been ordered by the House of Commons of the number of deaths in the administrative county of London in the year 1907 upon which a coroner's jury has returned a verdict of "Death from starvation," or "Death accelerated by privation"; together with any observations furnished to the Local Government Board by boards of guardians with reference to cases included in the return.

The Sale of Food and Drugs in Scotland.

The purpose of a Bill presented by Mr. MITCHELL-THOMSON in the House of Commons on Feb. 19th and read a first time, is to amend the Sale of Food and Drugs Acts, 1875 to 1907, as they relate to Scotland. Mr. MITCHELL-THOMSON has the support of Mr. YOUNGER, Mr. CLELAND, Mr. LAMONT, and Mr. RAINY in introducing the Bill.

Sale of Whisky Bill.

A Bill "to amend the law relating to the sale of whisky and to provide for the marking of casks and other vessels containing whisky" has been introduced into the House of Commons by Mr. WILLIAMSON. Sir ANDREW TORRANCE, Mr. MURRAY, and Mr. CATHCART WASON have given their support to the Bill by backing it.

Nurses' Registration.

The second Nurses' Registration Bill to be introduced into the House of Commons this session was presented last week by Mr. MUNRO FERGUSON. It is "to regulate the qualification of trained nurses and to provide for their registration." A very large number of backers has been obtained for this Bill. They include Sir JOHN DICKSON-POYNDER, Sir JOHN KENNAWAY, Sir GEORGE ROBERTSON, Mr. ROSE, Mr. RAINY, Mr. FELL, Mr. CROOKS, Dr. V. H. RUTHERFORD, Mr. JOWETT, and Mr. MCKILLOP. Another Nurses' Registration Bill was brought in a short time ago by Mr. CLAUDE HAY. Both measures have been previously before the House.

An Outbreak of Enteric Fever and Human "Carriers."

It is no exaggeration to say that the report which Dr. R. W BRANTHWAITE, His Majesty's Inspector under the Inebriates Act, has made to the Home Secretary on the outbreak of enteric fever at Brentry Certified Inebriate Reformatory has caused the deepest interest in Parliamentary circles. Considerable attention has been recently given to the subject of milk-supply in anticipation of legislation, as the number of questions to Ministers bearing on the matter shows. However, the investigation of the outbreak of enteric fever at Brentry discloses a wider problem than legislators imagined they had to solve. Dr. BRANTHWAITE adopts the conclusion "that there seems to be every reason to believe" that the presence of a human "carrier" in the kitchen and afterwards in the dairy was the sole cause of the outbreak. Naturally, the significance of the report has not been lost on those Members of Parliament who are aiming at legislation to guard against the transmission of disease through the agency of milk. Dr. BRANTHWAITE'S conclusions have been carefully studied by them. "Whatever else may be deduced from our experience in this epidemic," he writes, "it is fairly obvious that persons who have had typhoid, at any previous date, should be subjected to more than a cursory examination before being appointed to posts which necessitate the handling or distribution of food. It also seems evident in view of the uncertainty which must prevail as to whether persons are infective or not, that greater care is indicated to ensure cleanliness, and even disinfection, of the hands and finger nails of all persons employed in the preparation or manipulation of food, especially when avoidance of these precautions is likely to harm large bodies of persons under detention in institutions or collected as an army in the field. ..... It is also of extreme importance to discover whether a typhoid 'carrier' can by any course of treatment be rendered non-infective, or whether persons who have become 'chronic carriers' will remain in that condition for the remainder of life. In either contingency the notification and registration of such persons seems to be indicated, until freedom from infection can be guaranteed." Dr. BRANTHWAITE acknowledges his obligation to Dr. D. S. DAVIES and to Dr. I. WALKER HALL for the part which they took in the investigation.

The Sale of Diseased Meat in Scotland.

Several Scotch Members including Mr. CATHCART WASON and Mr. WATT, have recently been taking up the question of the sale of diseased cattle and also the sale of diseased meat in Scotland. It is their desire to press this question on the attention of the Secretary for Scotland.

HOUSE OF COMMONS.

WEDNESDAY, FEB. 19TH.

The Notification of Births Act in London.

Mr. ACLAND ALLEN asked the President of the Local Government Board how many metropolitan boroughs had decided to adopt the Notification of Births Act, and whether any and, if so, which metropolitan boroughs had decided not to adopt this Act.—Mr. BURNS replied: The Act has been adopted in the City of London and in 16 out of the 28 metropolitan boroughs. I have received information to the effect that it is proposed to adopt it in another of these boroughs. The only metropolitan borough, in which, so far as I am aware, the council has expressed a view adverse to the adoption of the Act is the borough of Deptford.

Milk-blended Butter.

Mr. O'SHAUGHNESSY asked Sir Edward Strachey, as representing the Board of Agriculture, to state the 19 names under which milk-blended butter was sold in accordance with the Butter and Margarine Act, 1907, with the approval of the Board of Agriculture. Sir EDWARD STRACHEY furnished the following written reply: The names which have been approved by the Board for use in connexion with milk-blended butter are Consumo, Casova, Casmon, Casova, Casana, Casco, Casa, Iveldale, Iveldene, Iveleat, Ivelene, Ivelette, Ivelike, Ivelmene, Ivelmore, Mavblossom, Pearks' Breadmate, Pearks' Bredapred, and Pearksown. We do not know how many of them are actually in use.

The Condition of a Galway Burial Ground.

Mr. CHARLES CRAIG asked the Chief Secretary to the Lord Lieutenant of Ireland whether the medical officer of health in Galway, at the instance of the Local Goverment Board, made a report with reference to the condition of the Forthill burial ground, Galway, and as to whether further burials should be prohibited therein; what did that report recommend; and what steps if any, had been taken to carry out the said recommendations.—The ATTORNEY GENERAL for Ireland (in the absence of Mr. BIRRELL) answered: Yes, sir. The medical officer of health reported that in his opinion, there was not sufficient space for the opening of new graves. The urban district

council, however, informed the Local Government Board that no new graves had been opened in this graveyard for some years past and that the interments are limited to the case of persons whose grave spaces and vaults have been reserved owing to their having possessed rights of interment therein. In these circumstances the Local Government Board has taken no further action in the matter.

Milk-supply.

Sir FRANCIS CHANNING asked the President of the Local Government Board whether he had considered the statement in the report of Dr. W. Collingridge, medical officer of health of the City of London, as to the dangerously dirty and infectious character of samples of milk and as to the increasing percentage of unsatisfactory samples; and whether he could and would take immediate steps and by administrative orders or by representation to local authorities concerned to provide some temporary check or remedy to these evils pending the passing of the legislation promised.—Mr. BURNS replied (by written answer): I have not at present received a copy of the report referred to. I am, however, aware of its general purport and I have asked for a copy of the report itself. The Local Government Board has steadily pressed upon local authorities and especially upon rural district councils, the importance of bringing about more cleanly and efficient methods in connexion with the supply of milk. This has been done by correspondence, by calling for special reports from medical officers of health in particular cases, and in many instances by causing inspection of rural districts to be made by their own medical staff in which attention has been given to this matter. It does not appear to me that any immediate administrative action could with advantage be taken, but I trust that the effect of the Bill which I hope to introduce will be to secure more satisfactory control over the milk-supply of the country.

A Case of Anthrax.

Sir FRANCIS CHANNING asked the Secretary of State for the Home Department whether any inquiry had been, or would be, made by the Home Office into the circumstances attending the death of William Howe, woolcomber, in the employ of Messrs. Roper of Lavenham, Suffolk, who died on August 1st, 1907, from anthrax, stated to have been caused by sorting horsehair; whether horsehair imported from abroad was disinfected under the regulations; whether horsehair produced in Great Britain had also to be disinfected; whether he was aware that several cases of fatal anthrax had occurred among animals in the immediate neighbourhood since the death of William Howe; and whether he would take steps to secure by regulation or otherwise more effective disinfection of materials, whether of foreign or British origin, and prompt and complete destruction of all matter and refuse from factories or warehouses suspected to be of an infectious character.—Mr. GLADSTONE sent a written reply to the following effect: Full inquiry was made at the time into the circumstances of this case. The question of the risk of anthrax to workers in horsehair has been under my consideration and regulations were made by me last December under Section 79 of the Factory Act—to come into force on April 1st next—which will require all horsehair from China, Siberia, and Russia to be disinfected before undergoing any manipulation other than opening and sorting, and special precautions to be observed in opening and sorting. These are the only kinds of horsehair the risk from which is so great as to call for special regulations. In the case of horsehair of British origin the risk is very slight; of 1320 animals attacked by anthrax in this country in 1906 36 only were horses and under the Anthrax Order of 1899 the carcass of every animal affected, or suspected to be affected, by anthrax is required to be burned or buried. I am informed by the Board of Agriculture that an outbreak of anthrax occurred in the immediate neighbourhood of the factory in question very shortly after the death of William Howe, affecting three horses; in future under the new regulations all dust collected from the opening and sorting screens where China, Siberian, or Russian hair that has not been disinfected is opened or sorted will require to be burned.

THURSDAY, FEB. 20TH.

Imported Milk and Cream.

Mr. COURTHOPE asked the President of the Local Government Board whether, owing to the rapid increase of imports of fresh milk and cream and the uncertainty of the sanitary conditions under which such milk and cream were produced, he would make stringent regulations for the inspection and examination of imported milk and cream at the ports of entry. The honourable Member also addressed a series of questions to the President of the Board of Trade on the sanitary conditions under which milk and cream were produced and handled abroad.—Mr. BURNS answered all these questions in one reply. He said: Ordinarily the supply of fresh milk from abroad is insignificant but owing to a shortage in home supplies there has been an exceptional importation during the last few weeks. The quantity of fresh milk imported into this country in the first seven weeks of this year was 697 cwt. as compared with 15 cwt. in the corresponding weeks of last year, whilst of cream the quantity imported was 11½ cwt. as compared with 690 cwt. The milk is imported from France and landed at Southampton. The cream comes from France, Russia, Norway, the Netherlands, Belgium and the Argentine Republic, and is landed at London, Harwich, Hull, Newhaven, Newcastle, Southampton, Leith, and Grangemouth. The information in my possession is not sufficient to enable me to say how far satisfactory regulations are in force in the countries of origin as to the sanitary conditions under which the milk and cream are produced and handled. I am arranging to have some samples of imported milk examined as to bacterial contamination and presence of dirt and I will give consideration to the subject of regulations in relation both to milk and to cream.

St. John and St. Andrew Ambulance Lectures.

Major ANSTRUTHER-GRAY asked the President of the Board of Trade whether he could state what were the minimum respective curricula requisite for obtaining a master's or mate's first-aid certificate under St. John and St. Andrew Ambulance.—Mr. KEARLEY answered: In order to qualify for examination for the certificates of proficiency in first aid granted by the St. John Ambulance Association a candidate must attend at least four of a course of five lectures, each of two hours' duration. In the case of the St. Andrew Ambulance Association the candidate must attend at least eight out of a course of 12 lectures of one and a half hours' duration. The syllabus of the lectures under the two associations covers practically the same ground.

Influenza at Chatham.

Mr. CLYNES asked the Secretary to the Admiralty whether his attention had been called to the fact that an epidemic of sickness, chiefly pneumonia, had broken out amongst the men in His Majesty's Navy at present at Chatham; and, if so, whether he could state the number of men who had died, and also to what cause the epidemic was ascribed.—Mr. EDMUND ROBERTSON sent the following written reply: The only sickness at Chatham that partakes of the nature of an epidemic is influenza which is prevalent there as elsewhere, and this has been followed in a few instances by pneumonia. Four men have died within the last fortnight from this latter disease. No cause can be ascribed for the outbreak of influenza which is apparently seasonal.

Registration of Death and Burial.

Mr. HOLT asked the President of the Local Government Board in what circumstances burial was permitted previously to the registration of death.—Mr. BURNS (by written answer) replied: It may be stated generally that the registration of the death is not necessary before burial takes place Section 17 of the Births and Deaths Registration Act, 1874, and Section 11 of the Burial Laws Amendment Act, 1880, contain provisions on the subject, and it will be seen from them that where there is either an order of a coroner authorising burial or a certificate of a registrar that he has registered or received notice of the death, the order or certificate must be delivered to the person conducting the funeral service or responsible for the burial. If no such order or certificate is delivered to this person he must give notice of the burial to the registrar.

MONDAY, FEB. 24TH.

Deaths under Anæsthetics.

Mr. PICKERSGILL asked the Secretary of State for the Home Department whether there were any statistics of the number of deaths under anæsthetics administered for the purpose of an operation occurring annually in the United Kingdom or any part thereof. The honourable Member stated that since he had given notice of this question he had found that there were statistics for England and Wales, but he asked whether the right honourable gentleman could tell him if there were similar statistics for Scotland and Ireland.—Mr. GLADSTONE replied: I am afraid that I cannot answer that question, but the figure for England and Wales is 183.

The Royal Commission on Whisky.

Mr. DEVLIN asked the President of the Board of Trade whether he could state the reason why no representative of Ireland had been appointed on the Royal Commission to inquire into the manufacture of whisky; and whether, in view of the fact that the question was of vital concern to a number of whisky manufacturers and traders in Ireland, he would consider the advisability of giving Ireland adequate representation on the Commission.—Mr. BURNS (who replied) said: I communicated with the Irish Local Government Board before the Royal Commission was constituted. They nominated Professor Adeney, curator of the Royal University of Ireland and leading examiner in chemistry, to act on it. He was appointed accordingly. I may add that it was not intended that the manufacturers and traders should be represented on the Commission. They will be asked to give evidence before it.

Mr. J. REDMOND stated that the Nationalists desired that the appointment should be impartial and he would urge upon the right honourable gentleman to appoint some Irishman who would command the confidence of all parties in Ireland instead of allowing the Local Government Board to nominate a gentleman of whom nobody had ever heard in Ireland and against whom, both in Dublin and in Belfast, there had been strong protests.—Mr. BURNS, in reply, quoted a letter to the effect that the gentleman in question had his degree of Doctor of Science of the Royal University of Ireland conferred upon him by the Senate on account of his researches in bacterial fermentation among other allied chemical objects. He had had a very distinguished college career and was now an examiner in chemistry and curator of the Science Department of the Royal University of Dublin. He (Mr. Burns) thought that this gentleman was the best man to appoint.

County Medical Officers of Health.

Mr. G. J. COOPER asked the President of the Local Government Board whether any and, if any, which of the county councils in England and Wales had not appointed a medical officer of health; whether any and, if any, which county councils had appointed medical officers of health giving part-time service to the duties of the office; and whether he had considered the advisability of initiating legislation requiring every county council to appoint a medical officer of health who should not hold any other appointment or engage in private practice.—Mr. BURNS replied (by written answer): According to the latest information in my possession there are 32 county councils which have not appointed a medical officer of health. The last Parliamentary Return on the subject made in 1904 shows that there were then 12 cases in which a county medical officer of health was not required to devote his whole time to his duties. I will send my honourable friend a list of the county councils above referred to. The matter to which he alludes in the last part of the question is receiving my consideration.

A Question of Public Health in Belfast.

Mr. DEVLIN asked the Chief Secretary to the Lord Lieutenant of Ireland whether he was aware that the Belfast corporation was at present filling up vacant ground opposite Seaview, Shore-road, Belfast, with filthy refuse; whether the medical officer of the district, Dr. J. C. Ferguson, reported to the corporation that the depositing of this filthy rubbish was dangerous to the health of residents in the vicinity; whether the corporation had refused to take any action either to discontinue or to mitigate the nuisance complained of; and whether, in view of the high death-rate in Belfast, he would order the Local Government Board to take immediate steps to protect the health of the residents effected.—The ATTORNEY-GENERAL for Ireland (Mr. CHERRY) furnished the following written reply: The Local Government Board have referred this question to the town clerk of Belfast, who has informed them, in reply, that the medical officer of health and the city surveyor have examined the place referred to in the question and found nothing there but ordinary street sweepings and a small quantity of horse manure which had apparently been swept off a car stand. The town clerk adds that action had been taken in the matter before Dr. Ferguson reported and that no nuisance exists at the place.

Glanders in Man.

Mr. LAURENCE HARDY asked the Chancellor of the Exchequer whether his attention had been called to the report of the inquest on James Shaw, who died on Feb. 8th from glanders, and to the evidence which stated that deaths of human beings from this disease were much more frequent than was supposed; and whether he would now make a grant to the local authorities of the country from the National Exchequer in order to facilitate the stamping out of this terrible scourge to man and beast.—Mr. ASQUITH (in a written answer) replied: I have seen accounts of the case referred to in the public press. Under the new Order, which came into operation on the 1st proximo, the disease is now being dealt with much more effectively than in the past and I trust that the steps which are being taken will prove efficacious in stamping it out altogether. The statutory duty of dealing with the matter rests with the local authorities and the efficiency of the measures taken has no direct connexion with the question of incidence of charge as between local and imperial funds. This latter question must be considered on its merits in connexion with the relations of local and national finance generally.

TUESDAY, FEB. 25TH.

The Sleeping Sickness.

Mr. SUMMERBELL asked the Under Secretary of State for the Colonies whether he could state the number of deaths in the Uganda Protectorate from sleeping sickness during the past five years; and whether the Government intended to take any action in regard to the prevention of such disease.—Mr. CHURCHILL replied: It is impossible to obtain accurate statistics regarding the mortality from sleeping sickness in Uganda, but in a recent dispatch the Governor has estimated the number of deaths at 200,000 during the past seven years. Every effort is being made by the Government to combat the disease by scientific investigation under the direction of the Royal Society, by local administrative measures and by international coöperation with the other Powers whose possessions in Africa are similarly afflicted.

Major ANSTRUTHER-GRAY: Is the disease increasing or decreasing?—Mr. CHURCHILL: It is at present on the decrease in the localities affected. That is not due to means of curing the illness, but to the exhaustion and destruction of the population in the districts affected.

Tuberculosis in the Army.

Colonel SEELY asked the Secretary of State for War what steps His Majesty's Government proposed to take in order to insure the proper treatment of men invalided from the army suffering from tuberculosis.—Mr. HALDANE: I must refer my honourable and gallant friend to an answer which I gave on Feb. 18th. As my honourable and gallant friend is aware special efforts are made to secure places for the invalids in civil hospitals and a notification is sent to the medical officer of the town in which the soldier intends to reside.

Colonel SEELY: Is the right honourable gentleman aware that in the great majority of cases for soldiers suffering from tuberculosis discharged from the Army no such places are found, and that they are discharged to their homes not only to their own disadvantage but to that of the population generally?—Mr. HALDANE: We are quite aware that there are soldiers who suffer from tuberculosis. That is also the case with sailors and with post office employees. It is also the case that numbers of the civil population also suffer from it. The Government as a whole has considered this question and has come to the conclusion that it would not be fair to deal with the soldier differentially.

Glanders in Man.

Mr. JOHN WARD asked the President of the Local Government Board whether his attention had been called to an inquest held by Dr. Waldo on Feb. 18th, 1908, on a man named Shaw, who was stated to have died from glanders contracted while shipping worn-out horses to Belgium and Rotterdam for human consumption; whether the evidence showed that such horses were returned in the shape of sausages and tinned meat, and that though such food might be cooked it was impossible wholly to destroy the germs; and whether in these circumstances his department would take immediate action with a view to removing possible danger of spreading disease.—Mr. BURNS answered: My attention has been called to the inquest referred to. I understand that one of the witnesses thought that to some small extent sausages made abroad from horseflesh were exported to this country, but I am informed that he did not say that horseflesh was returned to this country in tins. I am advised that the bacillus of glanders, if present in meat, would not be destroyed if the cooking of the meat was imperfectly carried out, but that cooking which heated the meat to 55° C. for ten minutes might kill the bacillus. The importation of sausage-meat is receiving my consideration in connexion with the regulations which I am preparing under the Public Health (Regulations as to Food) Act of last session.

Vaccination Exemption in Scotland and England.

Mr. HENRY WALKER asked the President of the Local Governmen Board whether, seeing that the Vaccination (Scotland) Act, 1907, enabled parents to avail themselves of its provisions whatever the age of their children might be, whereas the Vaccination Act, 1907, was not retrospective, he would introduce a measure to assimilate the law in England and Wales to that in Scotland.—Mr. BURNS: The circumstances in relation to this matter were not the same in the two countries under the Vaccination Acts prior to the legislation of last session. In England a parent could obtain exemption from penalties for not having his child vaccinated if he satisfied two justices or a magistrate that he conscientiously believed that vaccination would be prejudicial to the health of the child. There was no such provision in force in Scotland. Hence when exemption on the ground of conscientious objection was allowed by the Scotch Act of last year it was necessary to provide for the case of children born before the passing of the Act, but there was no similar need as regards England. In future in both countries a parent will only obtain exemption if he makes the requisite statutory declaration within a prescribed period after the birth of the child. It does not appear to me necessary to introduce a Bill on this subject.

Nystagmus in Miners.

Mr. JOHN WARD asked the secretary of State for the Home Department whether his attention had been called to the case of a miner, Ralph Harrison, of Stoke-upon-Trent, who claimed at the local county court compensation under the Workmen's Compensation Act, 1906, on the ground that he was suffering from a disease called miner's nystagmus; whether this disease had been defined and scheduled as a trade disease by the Home Department under Clause 8 of the Workmen's Compensation Act; and what action, if any, he proposed to take in the matter.—Mr. GLADSTONE said in reply: My honourable friend was good enough to send me a newspaper report of this case, from which it appears that the proceedings were taken not under the provisions of Section 8, which relates to industrial disease, but under the other provisions of the Act relating to accidents; that the county court judge held that the case was not one of an accident but advised the applicant's solicitor to consider his client's position in regard to Section 8. The provisions of this section were extended to miner's nystagmus by my order in May last and if Harrison was disabled by the disease it was clearly under Section 8 that his claim should have been made.

WEDNESDAY, FEB. 26TH.

The Compulsory Notification of Tuberculosis in Ireland.

Mr. JEREMIAH MACVEAGH asked the Chief Secretary to the Lord Lieutenant of Ireland whether his attention had been called to the resolutions adopted at public meetings in connexion with the series of tuberculosis exhibitions recently held in Ireland; whether the Local Government Board intended to take any steps to make tuberculosis compulsorily notifiable; whether the various boards of education in Ireland had been communicated with on the subject of making compulsory the teaching of hygiene and domestic science in all schools; and whether it was intended to make provision in the immediate future for the official supervision of dairies and of the sale of food.—The ATTORNEY-GENERAL for Ireland (Mr. CHERRY) replied: Several resolutions such as are referred to have been received. The Tuberculosis Prevention (Ireland) Bill which my right honourable friend is to introduce will contain a clause providing for compulsory notification of tuberculosis. The Local Government Board have been in correspondence with the Commissioners of National Education upon the subject of teaching hygiene and domestic science in national schools. The official supervision of dairies and of the sale of food will be dealt with in the Tuberculosis Prevention Bill and in a new dairies order which the Local Government Board are about to issue.

BOOKS, ETC., RECEIVED.

APPLETON, SIDNEY, 25, Bedford-street, Covent Garden, London, W.C.

Gonorrhœa, its Diagnosis and Treatment. By Frederick Baumann, Ph.D., M.D., Professor of Genito-urinary Diseases in the Reliance Medical College and Instructor in Dermatology and Venereal Diseases in the College of Physicians and Surgeons, Chicago. Price 6s. net.

The Sexual Instinct, its Use and Dangers as affecting Heredity and Morals. By James Foster Scott, B.A. (Yale University), M.D., C.M. (Edinburgh University), late Obstetrician to Columbia Hospital for Women and Lying-in Asylum, Washington, D.C.; late Vice-President of the Medical Association of the District of Columbia. Second edition, revised and enlarged. Price 7s. 6d. net.

CAXTON PUBLISHING COMPANY, THE, Clun House, Surrey-street, London, W.C.

The Edinburgh Stereoscopic Atlas of Obstetrics. Edited by G. F. Barbour Simpson, M.D., F.R.C.P.E., F.R.C.S.E., Senior Assistant to the Professor of Midwifery in the University of Edinburgh, and Edward Burnet, B.A., M.B., Ch.B. With a Preface by Professor Sir J. Halliday Croom, M.D., F.R.C.P.E., F.R.C.S.E., F.R.S.E., Professor of Midwifery in the University of Edinburgh. In Four Sections, each containing Twenty-five Subjects, with Descriptive Text. Price of the four sections, 84s. net.

CHURCHILL, J. AND A., 7, Great Marlborough-street, London, W.

A Short Practice of Gynæcology. By Henry Jellett, B.A., M.D., B.Ch., B.A.O. (Dublin University), F.R.C.P.I., Gynæcologist and Obstetrical Physician to Dr. Steevens' Hospital. Third edition, revised and enlarged. Price 12s. 6d. net.

COLIN, ARMAND, 5, Rue de Méziéres, Paris.

La Lutte contre les Microbes. Par le Dr. Étienne Burnet, de l'Institut Pasteur, Chef du Service de la Vaccination de la Ville de Paris. Price Fr.3.50.

FISCHER, GUSTAV, Jena.

Die Entzündung. Eine Monographische Skizze aus dem Gebiet der Pathologischen Physiologie. Von Dr. Rudolf Klemensiewicz, O.Ö. Professor und Vorstand des Instituts für Allgemeine Pathologie an der Universität in Graz. Festschrift der K.K. Karl-Franzens-Universität in Graz aus Anlass der Jahresfeier am 15 November, 1905. Price M.3.

KEMP AND CO., LIMITED, Sassoon House, Elphinstone-circle, Bombay, India.

Kemp and Co.'s Prescribers' Pharmacopœia, a Synopsis of the More Recent Remedies, Official and Unofficial, with a Therapeutic Index. Sixth edition. With articles by Lt.-Col. W. B. Bannerman, M.D., B.Sc., I.M.S., Director, Bacteriological Laboratory, Bombay, on Antitoxins, Vaccines, and Organotherapy, and N. F. Surveyor, M.A., M.D., B.Sc., M.R.C.P. Lond., Professor of Bacteriology, G.M. College, on Bacteriology. Compiled and edited by A. Pell, F.C.S. Price not stated.

LATTES, S. & C., Via Garibaldi, 3 (Piazza Castello), Torino, Italy.

Dott. I. Valobra, Medico dell' Ospedale Mauriziano Umberto I. di Torino. Elementi di Röntgenologia Clinica (Tecnica-Diagnostica-Terapia). Prefazione del Prof. Camillo Bozzolo, Direttore della Clinica Medica Generale della Regia Università di Torino. Price L.10.

MARSHALL, HORACE AND SON, Temple House, Temple-avenue, and 125, Fleet-street, London, E.C.

A Manual of Vegetarian Cookery. By George Black, M.B Edin., Fell. Roy. Inst. Pub. Health, late Medical Officer of Health, Keswick. Price 1s. net.

MACDOUGALL, ALEX., 68, Mitchell-street, Glasgow.

Transactions of the Glasgow Pathological and Clinical Society. Volume XI. Sessions 1905–1906, 1906–1907. Edited by John Anderson, M.B., C.M., Hon. Editorial Secretary. Price not stated.

Transactions of the Glasgow Obstetrical and Gynæcological Society. Volume V. Sessions 1904–1905, 1905–1906. Price not stated.

MURRAY, JOHN, Albemarle-street, London, W.

The Truth and Error of Christian Science. By M. Carta Sturge (Moral Science Tripos, Cambridge), Author of "Thoughts Transcendental and Practical" and "Some Little Quakers in their Nursery." Price 2s. 6d. net.

ROYAL COLLEGE OF PHYSICIANS, Pall Mall East, London, S.W.

List of the Fellows, Members, Extra-Licentiates, and Licentiates of the Royal College of Physicians of London and of the Holders of the Diploma in Public Health, granted jointly by the Royal Colleges of Physicians and Surgeons. MCMVIII. Price not stated.

UNIVERSITY PRESS, Cambridge (CAMBRIDGE UNIVERSITY PRESS WAREHOUSE, C. F. CLAY, Manager, Fetter-lane, London, E.C.; and H. K. LEWIS, 136, Gower-street, London, W.C.).

The Bacteriology of Diphtheria. Including Sections on the History, Epidemiology and Pathology of the Disease, the Mortality caused by it, the Toxins and Antitoxins and the Serum Disease. By F. Loeffler, M.D., LL.D., Arthur Newsholme, M.D., F.R.C.P., F. B. Mallory, M.A., M.D., G. S. Graham-Smith, M.A., M.D., D.P.H., George Dean, M.D., William H. Park, M.D., and Charles F. Bolduan, M.D. Edited by G. H. F. Nuttall, M.D., Ph.D., Sc.D., F.R.S., Quick Professor of Biology in the University of Cambridge, Fellow of Christ's College, and G. S. Graham-Smith, M.A., M.D., University Lecturer in Hygiene, Cambridge. Price 25s. net.

UNIVERSITY TUTORIAL PRESS, LIMITED, 157, Drury-lane, London, W.C.

School Hygiene. By Robert A. Lyster, M.B., Ch.B., B.Sc. Lond., D.P.H., B.Sc. (Public Health), President of the Midland Branch of the Institute of Sanitary Engineers, Medical Officer of Health for Handsworth, and Medical Officer to the Education Committee, Handsworth; Lecturer in Hygiene at the University of Birmingham, Lecturer in Hygiene and School Hygiene at the Birmingham and Midland Institute. Price 3s. 6d.

WILLIAM R. JENKINS CO., 851–853, Sixth-avenue, New York. (BAILLIÈRE, TINDALL, AND COX, London.)

The Production and Handling of Clean Milk. By Kenelm Winslow, M.D., M.D.V., B.A.S. Harv., formerly Instructor in Bussey Agricultural Institute and Assistant Professor in the Veterinary School of Harvard University, Author of a Text-book on Veterinary Materia Medica and Therapeutics, Chairman of the Committee on Milk of the Washington State Medical Association. Price 10s. 6d. net.

WRIGHT, JOHN, AND CO., Bristol.

The Experimental Prophylaxis of Syphilis. By Dr. Paul Maisonneuve. Containing the Results of the Experiments on the Subject carried out at the Pasteur Institute by Professors Metchnikoff and Roux. Translated, and with an Introduction by Fernand L. de Verteuil, M.B. Edin., M.R.C.S., L.R.C.P., Surgeon, R.N. Price 4s. net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BERKELEY, COMYNS, M.B., B.C. Cantab., has been appointed Physician to In-patients at the City of London Lying-in Hospital.

BREAKELL, FREDERIC JAMES, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Second Assistant Medical Officer to the Suffolk District Asylum.

ELDER, G. T. D., M.R.C.S., L.R.C.P. Lond., has been appointed Surgeon to the Mansfield District Hospital.

ELLIOTT, WILLIAM HAROLD ARTHUR, M.B., B.S. Lond., L.S.A., has been appointed Demonstrator of Anatomy at University College, Bristol.

FORTESCUE-BRICKDALE, JOHN MATTHEW, M.D., B.Ch. Oxon., has been appointed Director of the Public Health Laboratory, University College, Bristol.

FRANKS, Sir KENDAL, C.B., M.D., F.R.C.S.Irel., has been appointed Consulting Surgeon to the Johannesburg Hospital.

GOULDEN, CHARLES BERNARD, M.B., B.C. Cantab., F.R.C.S., has been appointed Demonstrator of Anatomy at University College, Bristol.

JOHNSON, THOMAS, M.R.C.S., L.R.C.P. Edin., has been appointed Medical Inspector to the Coseley Education Authorities.

MCVITTIE, JOHN, M.B., Ch.B. Glasg., has been appointed Medical Officer and Public Vaccinator for the Parish of Dailly, Ayrshire.

PHILLIPS, J. GEORGE, M.B., B.S. Lond., has been appointed Assistant Physician to Bethlem and Bridewell Royal Hospitals and Assistant Medical Officer to King Edward Schools, London and Witley.

RHYS, OWEN L., M.B., B.Ch. Edin., has been appointed Medical Officer in Charge of the Electrical Department, Cardiff Infirmary.

THOMSON, G. RITCHIE, M.B., C.M. Edin., F.R.S.E., has been appointed Honorary Surgeon to the Johannesburg Hospital.

THOMSON, H. CAMPBELL, M.D. Lond., F.R.C.P. Lond., has been elected Dean of the Medical School of the Middlesex Hospital.

WILLIAMSON, HERBERT, M.B. Cantab., has been appointed Physician to In-patients at the City of London Lying-in Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

AYLESBURY, BUCKS COUNTY LUNATIC ASYLUM, Stone.—Assistant Medical Officer. Salary £150 per annum, with board and apartments.

BANGOR, CARNARVONSHIRE AND ANGLESEY INFIRMARY.—House Surgeon. Salary £80 per annum, increasing to £100, with board, washing, and lodging.

BARNSLEY, BECKETT HOSPITAL.—House Surgeon, unmarried. Salary £100, with board and lodging.

BERMONDSEY INFIRMARY AND CASUAL WARDS, Lower-road, Rotherhithe, S.E.—Second Assistant Medical Officer. Salary £100 per annum, with rations, washing, apartments, and attendance.

BRADFORD ROYAL INFIRMARY.—House Physician, unmarried. Salary £100 per annum, with board and residence.

BRENTFORD UNION.—Medical Officer and Public Vaccinator for No. 4 (Brentford, &c.) District. Salary as Medical Officer £130 per annum and fees.

BRIGHTON, SUSSEX COUNTY HOSPITAL.—Assistant Pathologist. Salary £80 per annum, with board, residence, and laundry.

BRITISH LYING-IN HOSPITAL.—Physician to Out-patients.

CARDIFF COUNTY BOROUGH ASYLUM.—Senior Assistant Medical Officer, unmarried. Salary, &c., £200, increasing to £250, with quarters and all found. Also Junior Assistant Medical Officer. Salary, &c., £150, increasing to £180, with quarters and all found.

CARDIFF INFIRMARY (GENERAL HOSPITAL).—House Physician for six months. Salary £30, with board, residence, and laundry.

CARLISLE, CUMBERLAND INFIRMARY.—Resident Medical Officer. Salary at rate of £80 and £100 per annum, with board, lodging, and washing.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Physician to Out-patients.

DARLINGTON HOSPITAL AND DISPENSARY.—House Surgeon, unmarried. Salary £120 per annum, with board, lodging, and laundry.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—House Surgeon for six months. Salary £25, with board, residence, laundry, &c.

GLAMORGAN COUNTY COUNCIL.—Three Medical Inspectors of Children in Public Elementary Schools (two male, one female). Salary of males £300 each, and of female £250, with travelling expenses in each case.

GOLD COAST.—Six Medical Men for Plague Duty. Pay £50 a month.

GUY'S HOSPITAL.—Two additional Honorary Anæsthetists.

HAMPSHIRE COUNTY COUNCIL.—Medical Officer of Health. Salary £700 net.

KIDDERMINSTER, FRIENDLY SOCIETIES MEDICAL AID ASSOCIATION.—Assistant. Salary £160.

LANARK COUNTY COUNCIL.—Bacteriologist. Salary £250 per annum.

LANCASTER, ROYAL ALBERT ASYLUM.—Junior Assistant Medical Officer, unmarried. Salary £150 per annum, with board, apartments, and washing.

LEYTON, WALTHAMSTOW, AND WANSTEAD CHILDREN'S GENERAL HOSPITAL.—Resident House Surgeon. Salary £100 per annum, with board, rooms, and washing.

LIVERPOOL DISPENSARIES.—Assistant Surgeon, unmarried. Salary £100 per annum, with board and apartments.

LIVERPOOL INFIRMARY FOR CHILDREN.—Assistant House Surgeon for six months. Salary £30, with board and lodging.

LONDON COUNTY ASYLUM, Colney Hatch, New Southgate, N.—Junior Assistant Medical Officer, unmarried. Salary £150 per annum, with board, apartments, and washing.

LONDON FEVER HOSPITAL, Liverpool-road, N.—Assistant to the Resident Medical Officer. Salary £120 per annum, with residence and board.

LONDON TEMPERANCE HOSPITAL.—Assistant Resident Medical Officer for six months. Salary at rate of 50 guineas per annum, with board and residence. Also Assistant House Surgeon for six months. Salary at rate of £75 per annum.

MANCHESTER CHILDREN'S HOSPITAL, Pendlebury.—Junior Resident Medical Officer, unmarried. Salary at rate of £80 per annum, with board and lodging.

MANCHESTER, ST. MARY'S HOSPITALS FOR WOMEN AND CHILDREN.—Fourth House Surgeon for six months. Salary £25, with board and residence.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—House Physician, House Surgeon, Assistant House Physician, and Assistant House Surgeon, all for six months. Salaries of two former at rate of £40 a year each, and of two latter at rate of £20 a year each. Also Pathologist. Salary at rate of £100 per annum. Also Resident Anæsthetist. Salary at rate of £90 per annum.

MIDDLESBROUGH EDUCATION COMMITTEE.—Assistant to the Medical Inspector of School Children. Salary £300 per annum.

MULLINGAR DISTRICT LUNATIC ASYLUM.—Resident Junior Assistant Medical Officer. Salary £100 per annum, all found.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Albany Memorial, Queen-square, Bloomsbury.—Resident Medical Officer. Salary £100 per annum, with board and apartments.

NEWPORT (MON.) EDUCATION COMMITTEE.—Assistant Medical Officer of Health and Medical Inspector of Schools. Salary £225, rising to £275 per annum.

NORWICH, CITY AND COUNTY OF.—School Medical Officer and Assistant Medical Officer of Health. Salary £250, rising to £300 per annum.

NORWICH, NORFOLK COUNTY ASYLUM, Thorpe.—Junior Assistant Medical Officer, unmarried. Salary £150 per annum and all found.

OXFORDSHIRE EDUCATION COMMITTEE.—Medical Adviser. Salary £350 per annum.

PAISLEY, ROYAL ALEXANDRA INFIRMARY, Barbour Park.—House Surgeon. Salary £40, with bed and board.

PONTYPRIDD EDUCATION COMMITTEE.—Medical Officer. Salary £200, rising to £250 per annum.

ROYAL BERKSHIRE HOSPITAL.—House Physician. Salary £80 per annum, with board, lodging, and washing. Also Assistant House Surgeon. Salary £60 per annum, with board, lodging, and washing.

ROYAL NAVY, MEDICAL DEPARTMENT.—Examination for not less than 15 Commissions.

ST. MARY'S HOSPITAL MEDICAL SCHOOL, Paddington, W.—Demonstrator of Physiology. Salary at rate of £150 per annum.

SALFORD ROYAL HOSPITAL.—House Surgeon, also Junior House Surgeon, both for six months. Salaries at rate of £60 and £50 per annum respectively, with board and residence.

SALISBURY INFIRMARY.—Assistant House Surgeon, unmarried. Salary £50 per annum, with apartments, board, and lodging.

STAFFORDSHIRE EDUCATION COMMITTEE.—Three Assistant School Medical Officers (male or female). Salaries £250, rising to £300.

SUTTON (SURREY) URBAN DISTRICT COUNCIL.—Medical Officer of Health. Salary £200 per annum.

THROAT HOSPITAL, Golden-square, W.—House Surgeon. Salary £75 per annum, with residence, board, and laundry.

WARRINGTON, LANCASHIRE COUNTY ASYLUM, Winwick.—Assistant Medical Officer, unmarried. Salary £150 per annum, with apartments, board, attendance, and washing.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Two House Physicians and three House Surgeons for six months. Board, lodging, and laundry allowance provided.

WESTERN GENERAL DISPENSARY, Marylebone-road, N.W.—Junior House Surgeon. Salary at rate of £80 per annum, with board, lodging, and washing.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Hawes, in the county of York; at Waterford, in the county of Waterford; at Killough, in the county of Down; and at Clonmel, in the county of Tipperary.

Births, Marriages, and Deaths.

BIRTHS.

BROADBENT.—On Feb. 19th, at Brunswick-square, Brighton, the wife of Walter Broadbent, M.D., M.R.C.P., of a son.

LESLIE.—On Feb. 21st, at Inversbiel, Morningside Park, Edinburgh, the wife of John Gordon Leslie, M.B., C.M., of a son.

ROWLAND.—On Feb. 24th, at St. John-street, Lichfield, the wife of Frank Mortimer Rowland, M.D. Cantab., of a daughter.

STRATFORD.—On Feb. 20th, at Worple-road, Wimbledon, the wife of Howard M. Stratford, M.R.C.S., L.R.C.P., of a son.

WILLIAMSON.—On Feb. 24th, at The Limes, Epsom, the wife of J. Williamson, M.D. Lond., of a daughter.

MARRIAGE.

DARTNELL—GILMOUR.—On Feb. 22nd, at St. Michael's Mickleham, Surrey, Staff-Surgeon Louis E. Dartnell, R.N., to Margaret Ethel, third daughter of the late David Gilmour and Mrs. Gilmour.

DEATH.

BARNES.—On Feb. 20th, at Sunningdale, West Worthing, Robert Sydenham Fancourt Barnes, M.D., F.R.S.E., of No. 15, Chesterterrace, Regent's Park, aged 59 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE SALE OF DISEASED PORK.

NOT one whit too severe was the penalty of £50 and costs which the Haywards Heath magistrates imposed upon Frank Botting, a Hurst butcher, on Monday last. He was summoned for having the diseased carcass of a pig in his slaughter-house and intended for food, and for exposing the diseased meat for sale. There were in all three separate offences. An inspector found portions of a carcass of a pig in an advanced stage of tuberculosis hanging in defendant's slaughter-house, while other portions of the same animal were found distributed in the defendant's two shops in the township. These portions also showed signs of disease, and a conversation with the defendant showed that the butcher was aware that something was the matter—in fact, he pointed out to the inspector the lungs and the liver, remarking that they were unsaleable and that he had showed the condition of those organs to the previous owner of the pig. Yet with this knowledge defendant did not fail to serve his customers with pork. Defendant's excuse was ignorance, but Mr. Hugh Stott, medical officer of health, said that undoubtedly the defendant must have known the state of the meat. The magistrates marked their sense of the defendant's conduct by fining him £20, £15, and £15 in each case respectively, or three months' hard labour in each case.

CONSUMPTION OF NUX VOMICA AND COCCULUS INDICUS IN 1830.

To the Editor of THE LANCET.

SIR,—The letter of "J. H. G." (1830) in your interesting corner "Looking Back" contains a reference to the author of "Death in the Pot" (more correctly and in full "Deadly Adulteration and Slow Poisoning, or Disease and Death in the Pot and Bottle"), which, if taken up, would have thrown a little light upon his question as to the destination of the large quantities of cocculus indicus then imported. "Death in the Pot" was published in 1829 and was avowedly largely based upon a previous publication by that indefatigable chemist Frederick Accum, "A Treatise on Adulterations of Food and Culinary Poisons," published in 1820. Accum gives a number of quotations from the minutes of a committee of the House of Commons which had been appointed for examining the price and quality of beer. There are numerous cases given of druggists fined for selling illegal ingredients to brewers, and among them Kernot and Alsop, for selling cocculus indicus, fined £25. Seizures of illegal ingredients at breweries throw much light on the question. In July, 1812, at a brewery in Tooting there were seized, multum (a mixture of quassia extract and liquorice juice; this was sometimes made up with a proportion of extract of cocculus indicus), 84 lbs.; cocculus indicus, 12 lbs.; hartshorn shavings, 14 lbs.; Spanish juice, 46 lbs. In a brewery at West Ham, June, 1813, cocculus indicus, 1 lb. Brewery at Limehouse, August, 1813, grains of paradise, 44 lbs.; quassia, 10 lbs. Brewery at Stratford, November, 1813, cocculus indicus, 12 lbs.; multum, 26 lbs.; grains of paradise, 12 lbs. A most extensive haul was made in 1817, the brewer having the following in his possession: cocculus indicus extract, 6 lbs.; multum, 560 lbs.; capsicum, 88 lbs.; copperas (for heading purposes), 310 lbs.; quassia, 150 lbs.; and many other similar articles. The penalties imposed varied from £200 to £500. There is plenty of evidence to prove that this drug was extensively used by brewers. The evidence with reference to nux vomica is not so clear. Statements as to its probable use have appeared from time to time but they are often of the character of that of Dr. Normandy who, in his evidence before the House of Commons Committee in 1855, said: "I have never detected nux vomica (in beer), but I feel inclined to think beer contains it because, although I could not obtain such evidence as would enable me to say it exists, I obtained such as makes it exceedingly probable." If, Sir, any of your numerous readers who are interested in the adulteration of food products have met with clear evidence of the adulteration of beer with nux vomica or strychnine as revealed by analysis, or by the presence of the so-called *fabia amara* or nux vomica seeds on brewery premises, it would be interesting if they would place the facts on record. That the use of cocculus indicus and *fabia amara* was pretty common may be gathered from Morrice's "Treatise on Brewing," of which the fifth edition (1815) is now before me, in which among his recipes for beers and porters are found formulæ such as this for brown stout: Malt, 20 quarters; hops, 2 cwt.; cocculus indicus berry, 4 lbs.; sugar, 23 lbs.; fabia amara, 6 lbs. A perusal of these old books and records quickly dispels any illusion one may have as to the good old times when beer was supposed to be a brew of malt and hops only.

I am, Sir, yours faithfully,

Manchester, Feb. 15th, 1908. WILLIAM KIRKBY.

WELL DONE!

WE have received from Bovril, Limited, a signed artist's proof of their "bonus" picture for this year, which is an excellent reproduction of an oil painting by Mr. Arthur J. Elsley, entitled "Well Done!" forming a companion picture to that of last year, "A Tempting Bait." The

picture is a very pretty one and is presented in a handsome frame. Its character can be guessed from the subject. In a sylvan landscape a little boy on a Shetland pony has just finished an exciting race at which a lady and group of children, with the inevitable collie dog in the foreground, have been looking on as interested spectators. Messrs. C. W. Faulkner and Co., who are responsible for the gravure, are to be congratulated upon its execution.

X.—Our correspondent is recommended to apply to the Medical Defence Union or the London and Counties Medical Protection Society. Either association it seems to us might be able to guarantee him against the risks which he mentions.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (2nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2 30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (3 P.M.), St. Mark's (2.30 P.M.).

TUESDAY (3rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3 30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (2 P.M., Ophthalmic, 2.15 P M.), Tottenham (2.30 P.M.).

WEDNESDAY (4th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2 30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.).

THURSDAY (5th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2 30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (2.30 P.M.), Tottenham (Gynæcological, 2.30 P.M.)

FRIDAY (6th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9 30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2 30 P.M.), St. Peter's (2 P.M.).

SATURDAY (7th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 20, Hanover-square, W.

TUESDAY. 5 P.M., Annual Meeting of Fellows of the Society. (*Pathological Section*). (Pathological Laboratory, Royal Army Medical College, Millbank). 8.30 P.M., Laboratory Meeting. Col. D. Bruce, R.A.M.C., and Capt. H. R. Bateman, R.A.M.C.: Demonstration of the Effects of Drugs on Trypanosomes. Brevet Lieut.-Col. W. B. Leishman, R.A.M.C.: Observations on the Parasites of Malaria, with demonstration. Capt. J. C. Kennedy, R.A.M.C.: A Nodular Disease occurring in the Intestines of Monkeys. Lieut.-Col. C. Birt, R.A.M.C.: Demonstration of Bang's Method of estimating Glucose in Urine.

FRIDAY.—(*Laryngological Section*). 5 P.M., Dr. G. K. Grimmer, Dr. E. B. Waggett, Mr. A. R. Tweedy, Dr. H. B. Robinson, and Mr. F. J. Steward: Cases and Specimens.

SATURDAY.—(*Otological Section*). 10 A.M., Mr. S. Scott, Mr. C. E. West, Mr. H. H. B. Cunningham, Dr. A. Bronner, Mr. M. Yearsley, and Dr. D. R. Paterson: Cases and Specimens. Mr. S. Scott and Mr. C. E. West: The Operative Surgery of the Labyrinth.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—9 P.M., Mr. C. J. Symonds: Malignant Disease of the Cæcum (illustrated by lantern slides, cases, and specimens). (Third Lettsomian Lecture.)

NORTH-EAST LONDON CLINICAL SOCIETY, Prince of Wales's General Hospital, Tottenham, N.

THURSDAY.—4.15 P.M., Clinical Cases.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY, West London Hospital, Hammersmith road, W.

FRIDAY.—8.30 P.M., Dr. Wylie: Foul Breath, its Causes and Treatment. Mr. Bowen: Pneumococcal Otitis Media.

HARVEIAN SOCIETY OF LONDON, Stafford Rooms, Tichborne-street, Edgware road, W.

THURSDAY.—Discussion on the Treatment of Pneumonia (opened by Dr. S. West).

CHILD STUDY SOCIETY LONDON, Parkes Museum, Margaret-street, W.

THURSDAY.—8 P.M., Mr. W. T. Elliott: The Education (Administrative Provisions) Act in Relation to the Inspection and Treatment of the Teeth.

SOCIETY OF ANÆSTHETISTS, 20, Hanover-square, W.

FRIDAY.—8 30 P.M., Mr. H. P. Dean: Spinal Anæsthesia. Followed by the Annual Meeting.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

MONDAY, WEDNESDAY, AND FRIDAY.—5 P.M., Prof. F. C. Shrubsall: The Physical Anthropology of the Pigmy and Negro Races of Africa. (Hunterian Lectures.)

ROYAL COLLEGE OF PHYSICIANS, Pall Mall East.

THURSDAY.—5 P.M., Dr. J. W. H. Eyre: Melitensis Septicæmia (Malta or Mediterranean Fever). (Milroy Lectures).

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. H. G. Adamson: Clinique (Skin).
TUESDAY.—4 P.M., Dr. W. Ewart: Clinique (Medical). 5.15 P.M., Lecture: Dr. G. B. Herman: The Use of the Curette.
WEDNESDAY.—4 P.M., Clinique (Surgical). 5.15 P.M., Lecture:—Prof. W. E. Dixon: The Action of Tobacco Smoke.
THURSDAY.—4 P.M., Mr. Hutchinson: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. D. Grant: Acute Inflammation of the Middle Ear.
FRIDAY.—4 P.M., Dr. D. Grant: Clinique (Ear).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith road, W.

MONDAY.—12 noon, Lecture:—Dr. Low: Pathological. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eye. 2.30 P.M., Operations. 5 P.M., Lecture:—Mr. Dunn: Cases of Eye Diseases.
TUESDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. 12 noon: Lecture:—Dr. Pritchard: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Ball: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations. Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. S. Taylor: Chlorosis and Gastric Ulcer.
WEDNESDAY.—10 A.M., Dr. Ball: Diseases of the Throat, Nose, and Ear. Dr. Saunders: Diseases of Children. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. K. Scott: Diseases of the Eye. 2.30 P.M., Operations. 5 P.M., Lecture:—Mr. Paget: Clinical.
THURSDAY.—12 noon, Lecture:—Dr. Pritchard: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eye. 2.30 P.M., Operations. 5 P.M., Lecture:—Mr. Baldwin: Practical Surgery.
FRIDAY.—10 A.M., Dr. M. Moullin: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Ball: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations. Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Mr. Paget: Clinical.
SATURDAY.—10 A.M., Dr. Ball: Diseases of the Throat, Nose, and Ear. Dr. Saunders: Diseases of Children. 2 P.M., Medical and Surgical Clinics X Rays. Dr. K. Scott: Diseases of the Eye. 2.30 P.M., Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Cliniques:—10 A.M., Surgical Out-patient (Mr. H. Evans). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Throat, Nose, and Ear (Mr. H. W. Carson); X Ray (Dr. A. H. Pirie). 4.30 P.M., Medical In-patient (Dr. A. J. Whiting).
TUESDAY.—Clinique:—10.30 A.M., Medical Out-patient (Dr. A. G. Auld). 2.30 P.M., Surgical Operations (Mr. Carson). Cliniques:—Surgical Out-patient (Mr. Edmunds); Gynæcological (Dr. A. E. Giles).
WEDNESDAY.—Cliniques:—2.30 P.M., Medical Out-patient (Dr. Whipham); Dermatological (Dr. G. N. Meachen); Ophthalmological (Mr. R. P. Brooks).
THURSDAY.—2.30 P.M., Gynæcological Operations. (Dr. Giles). Cliniques:—Medical Out-patient (Dr. Whiting); Surgical Out-patient (Mr. Carson); X Ray (Dr. Pirie). 3 P.M., Medical In-patient (Dr. G. P. Chappel). 4.30 P.M., Throat Operations (Mr. Carson).
FRIDAY.—10 A.M., Clinique:—Surgical Out-patient (Mr. H. Evans). 2.30 P.M., Surgical Operations (Mr. Edmunds). Cliniques:—Medical Out-patient (Dr. Auld); Eye (Mr. Brooks). 3 P.M., Medical In-patient (Dr. M. Leslie).

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2.15 P.M., Sir Dyce Duckworth: Medicine. 2.30 P.M., Operations. 3.15 P.M., Mr. W. Turner: Surgery. 4 P.M., Dr. StClair Thomson: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 4 P.M., Special Lecture:—Dr. StClair Thomson: Stenosis of Larynx and Treachea.

TUESDAY.—2.15 P.M., Dr. R. T. Hewlett: Medicine. 2.30 P.M., Operations. 3.15 P.M., Mr. Carless: Surgery. 4 P.M., Mr. M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.
WEDNESDAY.—2.15 P.M., Dr. F. Taylor: Medicine. 2.30 P.M., Operations. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical, 11 A.M., Eye. 2.15 P.M., Special Lecture:—Dr. F. Taylor: Congenital Heart Disease.
THURSDAY.—2.15 P.M., Dr. G. Rankin: Medicine. 2.30 P.M., Operations. 3.15 P.M., Sir W. Bennett: Surgery. 4 P.M., Mr. M. Davidson: Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical 12 noon, Ear and Throat.
FRIDAY.—2.15 P.M., Dr. R. Bradford: Medicine. 2.30 P.M., Operations. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.
SATURDAY.—2.30 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, N.

MONDAY.—9 A.M., Operations (Mr. White). 2.30 P.M., In-patients—Medical (Dr. Beevor); Out-patients—Medical (Dr. Willcox), Surgical (Mr. Low), Eye (Mr. Morton and Mr. Coats).
TUESDAY.—2.30 P.M., In-patients—Medical (Dr. Beale), Throat and Ear (Mr. Waggett); Out-patients—Surgical (Mr. Edmunds), Throat and Ear (Mr. French); Operations (Mr. Beale).
WEDNESDAY.—2.30 P.M., In-patients—Surgical (Mr. Stabb); Out-patients—Medical (Dr. Horder), Gynæcological (Dr. Lockyer), Skin (Dr. Whitfield), Teeth (Mr. Baly); Operations (Mr. Stabb).
THURSDAY.—2.30 P.M., In-patients—Medical (Dr. Morison).
FRIDAY.—3.30 P.M., Lecture:—Mr. V. W. Low: The Diagnosis and Treatment of certain Fractures.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Lecture:—Mr. Ballance: Surgery of the Nervous System.
FRIDAY.—3.30 P.M., Lecture:—Mr. Armour: Surgery of the Nervous System.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C.

THURSDAY.—6 P.M., Lecture:—Dr. M. Dockrell: Fungous Diseases of the Skin: I., Tinea Circinata; II., Tinea Imbricata; III., Tinea Versicolor; IV., Erythrasma; V., Actinomycosis; VI., Madura Foot.

CHARING CROSS HOSPITAL.

THURSDAY.—3 P.M., Demonstration:—Dr. Galloway and Dr. MacLeod: Diseases of the Skin. 4 P.M., Demonstration:—Mr. Fairbank: Orthopædic. (Post-Graduate Course).

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.

WEDNESDAY.—4 P.M., Lecture:—Dr. Wethered: Pulmonary Œdema.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.

THURSDAY.—4 P.M., Lecture:—Dr. Hutchison: Intestinal Worms and their Treatment.

ROYAL INSTITUTION OF GREAT BRITAIN, Albemarle street, Piccadilly, W.

TUESDAY.—3 P.M., Prof. W. Stirling: Membranes—their Structure, Uses and Products.
SATURDAY.—3 P.M., Prof. J. J. Thomson: Electrical Discharges through Gases.

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THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. II. of 1907, which was completed with the issue of Dec. 28th, were given in THE LANCET of Jan. 4th, 1908.

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(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Feb 27th, 1908.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Feb. 21	29·92	S.W.	0·08	61	53	46	46	47	Overcast
,, 22	29·86	S.W.	..	70	51	44	44	46	Overcast
,, 23	29·70	W.	0·09	65	48	42	43	47	Cloudy
,, 24	29·63	W.	0·01	58	46	37	36	39	Cloudy
,, 25	29·92	N.W.	0·25	66	47	39	39	41	Fine
,, 26	30·07	N.W.	0·17	74	49	38	38	40	Fine
,, 27	29·77	N.W.	0·08	67	49	39	41	43	Cloudy

During the week marked copies of the following newspapers have been received:—*The West London Press and Chelsea News, Daily Telegraph, Birmingham Post, Bristol Mercury, Morning Post, Sheffield Independent, Sheffield Telegraph, Westminster Gazette, Daily News, Chemical News, Dublin Times, Liverpool Courier, Army and Navy Gazette, Broad Arrow, Wimbledon and District Gazette, &c.*

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